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☐ 1. Document ID: US 20020013257 A1

L1: Entry 1 of 2

File: PGPB

Jan 31, 2002

PGPUB-DOCUMENT-NUMBER: 20020013257

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020013257 A1

TITLE: Use of ligands to GABAB receptors

PUBLICATION-DATE: January 31, 2002

INVENTOR-INFORMATION:

| NAME | CITY | STATE | COUNTRY | RULE-47 |
|---------------------|---------|-------|---------|---------|
| Bernasconi, Raymond | Oberwil | | CH | |
| Otten, Uwe | Basel | | CH | |

US-CL-CURRENT: 514/1

| | | | | | | | | | |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|

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| RWD | Draw Desc | Image |
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☐ 2. Document ID: US 20010023289 A1

L1: Entry 2 of 2

File: PGPB

Sep 20, 2001

PGPUB-DOCUMENT-NUMBER: 20010023289

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20010023289 A1

TITLE: DNA encoding a GABABR2 polypeptide and uses thereof

PUBLICATION-DATE: September 20, 2001

INVENTOR-INFORMATION:

| NAME | CITY | STATE | COUNTRY | RULE-47 |
|-------------------|-------------|-------|---------|---------|
| Jones, Kenneth A. | Bergenfield | NJ | US | |
| Laz, Thomas M. | Parlin | NJ | US | |
| Borowsky, Beth | Montclair | NJ | US | |

US-CL-CURRENT: 536/23.5

| | | | | | | | | | |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|

| | | |
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| RWD | Draw Desc | Image |
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| Term | Documents |
|--|-----------|
| GABAB\$3 | 0 |
| GABAB.USPT,PGPB. | 16 |
| GABABA.USPT,PGPB. | 1 |
| GABABLA.USPT,PGPB. | 1 |
| GABABRL.USPT,PGPB. | 1 |
| GABABRLA.USPT,PGPB. | 1 |
| GABABRLB.USPT,PGPB. | 1 |
| GABABR2.USPT,PGPB. | 1 |
| GABABR2:.USPT,PGPB. | 1 |
| GABAB1A.USPT,PGPB. | 1 |
| GABAB1AA.USPT,PGPB. | 1 |
| (GABAB\$3.AB. OR GABAB\$.TI.).USPT,PGPB. | 2 |

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Display Format:

REV

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Previous Page

Next Page

GBR2_RAT
ID GBR2_RAT STANDARD; PRT; 940 AA.
AC O88871; Q9QWU2; Q9JK36;
DT 20-AUG-2001 (Rel. 40, Created)
5 DT 20-AUG-2001 (Rel. 40, Last sequence update)
DT 20-AUG-2001 (Rel. 40, Last annotation update)
DE GAMMA-AMINOBUTYRIC ACID TYPE B RECEPTOR, SUBUNIT 2 PRECURSOR (GABA-B
DE RECEPTOR 2) (GABA-B-R2) (GB2) (GABABR2).
GN GABBR2.
10 OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX NCBI_TaxID=10116;
RN [1]
15 RP SEQUENCE FROM N.A.
RC TISSUE=Hypothalamus;
RX MEDLINE=99087320; PubMed=9872315;
RA Jones K.A., Borowsky B., Tamm J.A., Craig D.A., Durkin M.M., Dai M.,
RA Yao W.-J., Johnson M., Gunwaldsen C.A., Huang L.-Y., Tang C., Shen Q.,
20 RA Salom J.A., Morse K., Laz T., Smith K.E., Nagarathnam D., Noble S.A.,
RA Branchek T.A., Gerald C.;
RT "GABA(B) receptors function as a heteromeric assembly of the subunits
RT GABA(B)R1 and GABA(B)R2.";
RL Nature 396:674-679(1998).
25 RN [2]
RP SEQUENCE FROM N.A.
RC TISSUE=Brain cortex, and Cerebellum;
RX MEDLINE=99087322; PubMed=9872317;
RA Kaupmann K., Malitschek B., Schuler V., Heid J., Froestl W., Beck P.,
30 RA Mosbacher J., Bischoff S., Kulik A., Shigemoto R., Karschin A.,
RA Bettler B.;
RT "GABA-B receptor subtypes assemble into functional heteromeric
RT complexes.";
RL Nature 396:683-687(1998).
35 RN [3]
RP SEQUENCE FROM N.A.
RC TISSUE=Brain cortex;
RX MEDLINE=20193514; PubMed=10727622;
RA Clark J.A., Mezey E., Lam A.S., Bonner T.I.;
40 RT "Distribution of the GABA(B) receptor subunit gb2 in rat CNS.";
RL Brain Res. 860:41-52(2000).
RN [4]
RP SEQUENCE FROM N.A.
RC TISSUE=Hypothalamus;
45 RA Borowsky B., Laz T., Gerald C.;
RL Submitted (JAN-1999) to the EMBL/GenBank/DBJ databases.
RN [5]
RP R1A-R2 INTERACTION, AND VARIANTS TYR-337 AND PRO-19 INS.
RC TISSUE=Hippocampus;
50 RX MEDLINE=99102694; PubMed=9872744;
RA Kuner R., Koehr G., Gruenewald S., Eisenhardt G., Bach A.,
RA Kornau H.-C.;
RT "Role of Heteromer Formation in GABA-B Receptor Function.";
RL Science 283:74-77(1999).
55 CC -!- FUNCTION: RECEPTOR FOR GABA. THE ACTIVITY OF THIS RECEPTOR IS
CC MEDIATED BY G-PROTEINS THAT INHIBITS ADENYLYL CYCLASE ACTIVITY,
CC STIMULATES PHOSPHOLIPASE A2, ACTIVATES POTASSIUM CHANNELS,

CC INACTIVATES VOLTAGE-DEPENDENT CALCIUM-CHANNELS AND MODULATES
 CC INOSITOL PHOSPHOLIPIDS HYDROLYSIS. PLAYS A CRITICAL ROLE IN THE
 CC FINE-TUNING OF INHIBITORY SYNAPTIC TRANSMISSION. PRE-SYNAPTIC
 CC GABA-B-R INHIBIT NEUROTRANSMITTER RELEASE BY DOWN-REGULATING
 5 CC HIGH-VOLTAGE ACTIVATED CALCIUM CHANNELS, WHEREAS POSTSYNAPTIC
 CC GABA-B-R DECREASE NEURONAL EXCITABILITY BY ACTIVATING A PROMINENT
 CC INWARDLY RECTIFYING POTASSIUM (KIR) CONDUCTANCE THAT UNDERLIES THE
 CC LATE INHIBITORY POSTSYNAPTIC POTENTIALS. NOT ONLY IMPLICATED IN
 CC SYNAPTIC INHIBITION BUT ALSO IN HIPPOCAMPAL LONG-TERM
 10 CC POTENTIATION, SLOW WAVE SLEEP, MUSCLE RELAXATION AND
 CC ANTINOCICEPTION.
 CC -!- SUBUNIT: HETERODIMER OF GABA-B-R1 AND GABA-B-R2. NEITHER OF WHICH
 CC IS EFFECTIVE ON ITS OWN AND HOMODIMERIC ASSEMBLY DOES NOT SEEM TO
 CC HAPPEN.
 15 CC -!- SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN. MOREOVER
 CC COEXPRESSION OF GABA-B-R1 AND GABA-B-R2 APPEARS TO BE A
 CC PREREQUISITE FOR MATURATION AND TRANSPORT OF GABA-B-R1 TO THE
 CC PLASMA MEMBRANE.
 CC -!- TISSUE SPECIFICITY: EXPRESSED IN BRAIN CORTEX, HIPPOCAMPUS, MEDIAL
 20 CC HABENULA, THALAMUS AND CEREBELLUM. COEXPRESSION IS SEEN IN
 CC CEREBELLUM.
 CC -!- DEVELOPMENTAL STAGE: ABUNDANT IN BRAIN CORTEX AND CEREBELLUM
 CC THROUGHOUT POSTNATAL DEVELOPMENT WHEREAS ITS EXPRESSION IN SPINAL
 CC CORD GRADUALLY DECREASES.
 25 CC -!- DOMAIN: ALPHA-HELICAL PARTS OF THE C-TERMINAL INTRACELLULAR REGION
 CC MEDIATE HETERODIMERIC INTERACTION WITH GABA-B RECEPTOR 1.
 CC -!- SIMILARITY: BELONGS TO FAMILY 3 OF G-PROTEIN COUPLED RECEPTORS.
 CC GABA-B RECEPTOR SUBFAMILY.
 CC -----
 30 -
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 45 -
 DR EMBL; AF074482; AAD03335.1; -.
 DR EMBL; AJ011318; CAA09592.1; -.
 DR EMBL; AF058795; AAC63994.1; -.
 DR EMBL; AF109405; AAD03338.1; -.
 50 DR InterPro; IPR001828; ANF_receptor.
 DR InterPro; IPR000337; GPCR_Mgr.
 DR Pfam; PF00003; 7tm_3; 1.
 DR Pfam; PF01094; ANF_receptor; 1.
 DR PRINTS; PR00248; GPCRMGR.
 55 DR PRINTS; PR01176; GABABRECEPTR.
 DR PRINTS; PR01177; GABAB1RECPTR.
 DR PRINTS; PR01178; GABAB2RECPTR.

DR PROSITE; PS50099; PRO_RICH; 1.
 DR PROSITE; PS00979; G_PROTEIN_RECEP_F3_1; FALSE_NEG.
 DR PROSITE; PS00980; G_PROTEIN_RECEP_F3_2; FALSE_NEG.
 DR PROSITE; PS00981; G_PROTEIN_RECEP_F3_3; FALSE_NEG.
 5 DR PROSITE; PS50259; G_PROTEIN_REC_F3_4; 1.
 KW G-protein coupled receptor; Transmembrane; Glycoprotein; Signal;
 KW Postsynaptic membrane; Coiled coil; Polymorphism.
 FT SIGNAL 1 40 POTENTIAL.
 FT CHAIN 41 940 GAMMA-AMINOBUTYRIC ACID TYPE B RECEPTOR,
 10 FT SUBUNIT 2.
 FT DOMAIN 41 482 EXTRACELLULAR (POTENTIAL).
 FT TRANSMEM 483 503 I (POTENTIAL).
 FT DOMAIN 504 521 CYTOPLASMIC (POTENTIAL).
 FT TRANSMEM 522 542 II (POTENTIAL).
 15 FT DOMAIN 543 550 EXTRACELLULAR (POTENTIAL).
 FT TRANSMEM 551 571 III (POTENTIAL).
 FT DOMAIN 572 596 CYTOPLASMIC (POTENTIAL).
 FT TRANSMEM 597 617 IV (POTENTIAL).
 FT DOMAIN 618 653 EXTRACELLULAR (POTENTIAL).
 20 FT TRANSMEM 654 674 V (POTENTIAL).
 FT DOMAIN 675 690 CYTOPLASMIC (POTENTIAL).
 FT TRANSMEM 691 711 VI (POTENTIAL).
 FT DOMAIN 712 719 CYTOPLASMIC (POTENTIAL).
 FT TRANSMEM 720 740 VII (POTENTIAL).
 25 FT DOMAIN 741 940 CYTOPLASMIC (POTENTIAL).
 FT DOMAIN 780 818 COILED COIL (POTENTIAL).
 FT CARBOHYD 89 89 N-LINKED (GLCNAC. . .) (POTENTIAL).
 FT CARBOHYD 297 297 N-LINKED (GLCNAC. . .) (POTENTIAL).
 FT CARBOHYD 388 388 N-LINKED (GLCNAC. . .) (POTENTIAL).
 30 FT CARBOHYD 403 403 N-LINKED (GLCNAC. . .) (POTENTIAL).
 FT CARBOHYD 452 452 N-LINKED (GLCNAC. . .) (POTENTIAL).
 FT VARIANT 19 19 P -> R.
 FT VARIANT 19 19 P -> PP.
 FT VARIANT 337 337 F -> Y.
 35 FT CONFLICT 343 343 S -> T (IN REF. 2).
 SQ SEQUENCE 940 AA; 105751 MW; 77BB42D833C7505D CRC64;

40 Query Match 97.5%; Score 4819.5; DB 1; Length 940;
 Best Local Similarity 97.7%; Pred. No. 0;
 Matches 919; Conservative 14; Mismatches 7; Indels 1; Gaps 1;

45 Qy 1 MASPRSSGQPGPPPPPPPPARLLLLLLLLPLLLPLAPGAWGWARGAPRPPSSPPLSIMG 60
 |||| ||||| |||||||||||| || || ||||||| ||||||||||||||||
 Db 1 MASPPSSGQP-RPPPPPPPPARLLLPLLLSLLLWLAPGAWGWTRGAPRPPSSPPLSIMG 59

 Qy 61 LMPLTKEVAKGSIGRGVLPVELAIEQIRNESLLRPYFLDLRLYDTECDNAKGLKAFYDA 120
 ||||||||||||||||||||||||||||||||||||||||||||||||||||
 50 Db 60 LMPLTKEVAKGSIGRGVLPVELAIEQIRNESLLRPYFLDLRLYDTECDNAKGLKAFYDA 119

 Qy 121 IKYGNHLMVFGGVCPSVTSIIAESLQGNLVQLSFAATTPVLADKKKYPPFFRTVPSDN 180
 ||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 120 IKYGNHLMVFGGVCPSVTSIIAESLQGNLVQLSFAATTPVLADKKKYPPFFRTVPSDN 179
 55 Qy 181 AVNPAILKLLKHYYQWKRVTLTQDVQRFSEVRNDLTGVLYGEDIEISDTESFSNDPCTSV 240
 |||||||||||:::|:||||||||||||||||||||||||||||||||||

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|----|----|-----|--|-----|
| | Db | 180 | AVNPAILKLLKHFRWRRVGTLTQDVQRFSEVRNDLTGVLYGEDIEISDTEFSNDPCTSV | 239 |
| | Qy | 241 | KKLKGNDVRIILGQFDQNMAAKVFCCAYEENMYGSKYQWIIPGWYEPSWWEQVHTEANSS | 300 |
| 5 | Db | 240 | KKLKGNDVRIILGQFDQNMAAKVFCCAFEESMFGSKYQWIIPGWYEPAWWEQVHVEANSS | 299 |
| | Qy | 301 | RCLRKNLLAAMEGYIGVDFEPLSSQIKTISGKTPQQYEREYNNKRSVGVPSKFHGYAYD | 360 |
| | Db | 300 | RCLRRSLLAAMEGYIGVDFEPLSSQIKTISGKTPQQFEREYNSKRSVGVPSKFHGYAYD | 359 |
| 10 | Qy | 361 | GIWVIAKTLQRAMETLHASSRHQRIQDFNYTDHTLGRIILNAMNETNFFGVTGQVVERNG | 420 |
| | Db | 360 | GIWVIAKTLQRAMETLHASSRHQRIQDFNYTDHTLGKIIILNAMNETNFFGVTGQVVERNG | 419 |
| 15 | Qy | 421 | ERMGTIKFTQFQDSREVKVGEYNAVADTLEIINDTIRFQGSEPPKDKTIILEQLRKISLP | 480 |
| | Db | 420 | ERMGTIKFTQFQDSREVKVGEYNAVADTLEIINDTIRFQGSEPPKDKTIILEQLRKISLP | 479 |
| 20 | Qy | 481 | LYSILSALTILGMIMASAFLEFFNIKNRNQKLIKMSPPYMNLIILGGMLSYSIFLFLGLD | 540 |
| | Db | 480 | LYSILSALTILGMIMASAFLEFFNIKNRNQKLIKMSPPYMNLIILGGMLSYSIFLFLGLD | 539 |
| | Qy | 541 | GSFVSEKTFETLCTVRTWILTGVYTTAFGAMFAKTWRVHAI FKNVKMKKKI IKDQKLLVI | 600 |
| 25 | Db | 540 | GSFVSEKTFETLCTVRTWILTGVYTTAFGAMFAKTWRVHAI FKNVKMKKKI IKDQKLLVI | 599 |
| | Qy | 601 | VGGMLLIDLICILICWQAVDPLRRTVEKYSMEPDPAGRDISIRPLEHCENTHMTIWLIV | 660 |
| | Db | 600 | VGGMLLIDLICILICWQAVDPLRRTVERYSMEDPAGRDISIRPLEHCENTHMTIWLIV | 659 |
| 30 | Qy | 661 | YAYKGLMLFGCFLAWETRNV SIPALNDSKYIGMSVYNGIMCIIGA AVSFLTRDQPNVQ | 720 |
| | Db | 660 | YAYKGLMLFGCFLAWETRNV SIPALNDSKYIGMSVYNGIMCIIGA AVSFLTRDQPNVQ | 719 |
| 35 | Qy | 721 | FCIVALVIIFCSTITLCLVFVPKLITLRNPDAA TQNRRFQFTQNQKKEDSKTSTSVTSV | 780 |
| | Db | 720 | FCIVALVIIFCSTITLCLVFVPKLITLRNPDAA TQNRRFQFTQNQKKEDSKTSTSVTSV | 779 |
| 40 | Qy | 781 | NQASTSRLEGLQSENHRLRMKITELDKDLEEV TMQLQDTPEKTTYIKQNH YQELNDILNL | 840 |
| | Db | 780 | NQASTSRLEGLQSENHRLRMKITELDKDLEEV TMQLQDTPEKTTYIKQNH YQELNDILSL | 839 |
| | Qy | 841 | GNFTESTDGGKAILKNHLDQNPQLQWNTTEPS RTCKDPIEDINSPEHIQRRLSLQLPILH | 900 |
| 45 | Db | 840 | GNFTESTDGGKAILKNHLDQNPQLQWNTTEPS RTCKDPIEDINSPEHIQRRLSLQLPILH | 899 |
| | Qy | 901 | HAYLPSIGGVDASC VSPCVSPTASPRHRHVPPSFRVMV SGL | 941 |
| 50 | Db | 900 | HAYLPSIGGVDASC VSPCVSPTASPRHRHVPPSFRVMV SGL | 940 |

Art Unit: 1646

GBR2_HUMAN

ID GBR2 HUMAN STANDARD; PRT; 941 AA.
AC O75899; O75974; O75975; Q9UNS9; Q9UNR1; Q9P1R2;
DT 20-AUG-2001 (Rel. 40, Created)
5 DT 20-AUG-2001 (Rel. 40, Last sequence update)
DT 20-AUG-2001 (Rel. 40, Last annotation update)
DE GAMMA-AMINOBUTYRIC ACID TYPE B RECEPTOR, SUBUNIT 2 PRECURSOR (GABA-B
DE RECEPTOR 2) (GABA-B-R2) (GB2) (GABABR2) (G PROTEIN-COUPLED RECEPTOR
DE 51) (GPR 51) (HG20).
10 GN GABBR2 OR GPR51.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
15 RN [1]
RP SEQUENCE FROM N.A. (ISOFORM 2A).
RC TISSUE=Cerebellum;
RX MEDLINE=99087321; PubMed=9872316;
RA White J.H., Wise A., Main M.J., Green A., Fraser N.J., Disney G.H.,
20 RA Barnes A.A., Emson P., Foord S.M., Marshall F.H.;
RT "Heterodimerization is required for the formation of a functional
RT GABA(B) receptor."
RL Nature 396:679-682(1998).
RN [2]
25 RP PARTIAL SEQUENCE FROM N.A. (ISOFORMS 2A; 2B AND 2C).
RC TISSUE=Brain;
RX MEDLINE=20193514; PubMed=10727622;
RA Clark J.A., Mezey E., Lam A.S., Bonner T.I.;
RT "Distribution of the GABA(B) receptor subunit gb2 in rat CNS."
30 RL Brain Res. 860:41-52(2000).
RN [3]
RP SEQUENCE FROM N.A. (ISOFORM 2A).
RA Liu M., Parker R., McCrea K., Watson J., Baker E., Sutherland G.,
RA Herzog H.;
35 RT "Cloning and characterization of a novel human GABA-B receptor subtype
RT with high affinity for GABA and low affinity for baclofen."
RL Submitted (NOV-1998) to the EMBL/GenBank/DDBJ databases.
RN [4]
RP SEQUENCE FROM N.A. (ISOFORM 2A).
40 RC TISSUE=Hippocampus;
RA Borowsky B., Laz T., Gerald C.;
RL Submitted (JAN-1999) to the EMBL/GenBank/DDBJ databases.
RN [5]
RP SEQUENCE FROM N.A. (ISOFORM 2A).
45 RC TISSUE=Fetal brain;
RX MEDLINE=99189236; PubMed=10087195;
RA Ng G.Y.K., McDonald T., Bonnert T., Rigby M., Heavens R., Whiting P.,
RA Chateauneuf A., Coulombe N., Kargman S., Caskey T., Evans J.F.,
RA O'Neill G.P., Liu Q.;
50 RT "Cloning of a novel G-protein-coupled receptor GPR 51 resembling GABAB
RT receptors expressed predominantly in nervous tissues and mapped
RT proximal to the hereditary sensory neuropathy type 1 locus on
RT chromosome 9."
RL Genomics 56:288-295(1999).

Art Unit: 1646

RN [6]
RP SEQUENCE FROM N.A. (ISOFORM 2A), AND VARIANTS PHE-628 AND ALA-869.
RC TISSUE=Brain;
RX MEDLINE=99263199; PubMed=10328880;
5 RA Martin S.C., Russek S.J., Farb D.H.;
RT "Molecular identification of the human GABABR2: cell surface
RT expression and coupling to adenylyl cyclase in the absence of
RT GABABR1.";
RL Mol. Cell. Neurosci. 13:180-191(1999).
10 RN [7]
RP R1A-R2 INTERACTION.
RX MEDLINE=99175124; PubMed=10075644;
RA Ng G.Y.K., Clark J., Coulombe N., Ethier N., Hebert T.E., Sullivan R.,
RA Kargman S., Chateauneuf A., Tsukamoto N., McDonald T., Whiting P.,
15 RA Mezey E., Johnson M.P., Liu Q., Kolakowski L.F. Jr., Evans J.F.,
RA Bonner T.I., O'Neill G.P.;
RT "Identification of a GABAB receptor subunit, gb2, required for
RT functional GABAB receptor activity.";
RL J. Biol. Chem. 274:7607-7610(1999).
20 RN [8]
RP R1A-R2 INTERACTION.
RX MEDLINE=20237752; PubMed=10773016;
RA Sullivan R., Chateauneuf A., Coulombe N., Kolakowski L.F. Jr.,
RA Johnson M.P., Hebert T.E., Ethier N., Belley M., Metters K.,
25 RA Abramovitz M., O'Neill G.P., Ng G.Y.K.;
RT "Coexpression of full-length gamma-aminobutyric Acid(B) (GABA(B))
RT receptors with truncated receptors and metabotropic glutamate
RT receptor 4 supports the GABA(B) heterodimer as the functional
RT receptor.";
30 RL J. Pharmacol. Exp. Ther. 293:460-467(2000).
CC -!- FUNCTION: RECEPTOR FOR GABA. THE ACTIVITY OF THIS RECEPTOR IS
CC MEDIATED BY G-PROTEINS THAT INHIBITS ADENYLYL CYCLASE ACTIVITY,
CC STIMULATES PHOSPHOLIPASE A2, ACTIVATES POTASSIUM CHANNELS,
CC INACTIVATES VOLTAGE-DEPENDENT CALCIUM-CHANNELS AND MODULATES
35 CC INOSITOL PHOSPHOLIPIDS HYDROLYSIS. PLAYS A CRITICAL ROLE IN THE
CC FINE-TUNING OF INHIBITORY SYNAPTIC TRANSMISSION. PRE-SYNAPTIC
CC GABA-B-R INHIBIT NEUROTRANSMITTER RELEASE BY DOWN-REGULATING
CC HIGH-VOLTAGE ACTIVATED CALCIUM CHANNELS, WHEREAS POSTSYNAPTIC
CC GABA-B-R DECREASE NEURONAL EXCITABILITY BY ACTIVATING A PROMINENT
40 CC INWARDLY RECTIFYING POTASSIUM (KIR) CONDUCTANCE THAT UNDERLIES THE
CC LATE INHIBITORY POSTSYNAPTIC POTENTIALS. NOT ONLY IMPLICATED IN
CC SYNAPTIC INHIBITION BUT ALSO IN HIPPOCAMPAL LONG-TERM
CC POTENTIATION, SLOW WAVE SLEEP, MUSCLE RELAXATION AND
CC ANTINOCICEPTION.
45 CC -!- SUBUNIT: HETERODIMER OF GABA-B-R1 AND GABA-B-R2. NEITHER OF WHICH
CC IS EFFECTIVE ON ITS OWN AND HOMODIMERIC ASSEMBLY DOES NOT SEEM TO
CC HAPPEN.
CC -!- SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN. MOREOVER
CC COEXPRESSION OF GABA-B-R1 AND GABA-B-R2 APPEARS TO BE A
50 CC PREREQUISITE FOR MATURATION AND TRANSPORT OF GABA-B-R1 TO THE
CC PLASMA MEMBRANE.
CC -!- ALTERNATIVE PRODUCTS: 3 ISOFORMS; 2A (SHOWN HERE), 2B AND 2C; ARE
CC PRODUCED BY ALTERNATIVE SPLICING.
CC -!- TISSUE SPECIFICITY: HIGHLY EXPRESSED IN BRAIN, ESPECIALLY IN

Art Unit: 1646

CC CEREBRAL CORTEX, THALAMUS, HIPPOCAMPUS, FRONTAL, OCCIPITAL AND
 CC TEMPORAL LOBE, OCCIPITAL POLE AND CEREBELLUM, FOLLOWED BY CORPUS
 CC CALLOSUM, CAUDATE NUCLEUS, SPINAL CORD, AMYGDALA AND MEDULLA.
 CC WEAKLY EXPRESSED IN HEART, TESTIS AND SKELETAL MUSCLE.
 5 CC -!- DOMAIN: ALPHA-HELICAL PARTS OF THE C-TERMINAL INTRACELLULAR REGION
 CC MEDIATE HETERODIMERIC INTERACTION WITH GABA-B RECEPTOR 1.
 CC -!- SIMILARITY: BELONGS TO FAMILY 3 OF G-PROTEIN COUPLED RECEPTORS.
 CC GABA-B RECEPTOR SUBFAMILY.
 CC -----

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25 -
 DR EMBL; AJ012188; CAA09942.1; -.
 DR EMBL; AF056085; AAC63228.1; -.
 DR EMBL; AF095723; AAC63383.1; -.
 DR EMBL; AF095724; AAC63384.1; -.
 30 DR EMBL; AF095784; AAD30389.1; -.
 DR EMBL; AF074483; AAD03336.1; -.
 DR EMBL; AF069755; AAC99345.1; -.
 DR EMBL; AF099033; AAD45867.1; -.
 DR InterPro; IPR001828; ANF_receptor.
 35 DR InterPro; IPR000337; GPCR_Mgr.
 DR Pfam; PF00003; 7tm_3; 1.
 DR Pfam; PF01094; ANF_receptor; 1.
 DR PRINTS; PR00248; GPCRMGR.
 DR PRINTS; PR01176; GABABRECEPTR.
 40 DR PRINTS; PR01177; GABAB1RECPTR.
 DR PRINTS; PR01178; GABAB2RECPTR.
 DR PROSITE; PS50099; PRO_RICH; 1.
 DR PROSITE; PS00979; G_PROTEIN_RECEP_F3_1; FALSE_NEG.
 DR PROSITE; PS00980; G_PROTEIN_RECEP_F3_2; FALSE_NEG.
 45 DR PROSITE; PS00981; G_PROTEIN_RECEP_F3_3; FALSE_NEG.
 DR PROSITE; PS50259; G_PROTEIN_RECEP_F3_4; 1.
 KW G-protein coupled receptor; Transmembrane; Glycoprotein; Signal;
 KW Postsynaptic membrane; Coiled coil; Alternative splicing;
 KW Polymorphism.

50 FT SIGNAL 1 41 POTENTIAL.
 FT CHAIN 42 941 GAMMA-AMINOBUTYRIC ACID TYPE B RECEPTOR,
 FT SUBUNIT 2.
 FT DOMAIN 42 483 EXTRACELLULAR (POTENTIAL).
 FT TRANSMEM 484 504 I (POTENTIAL).

Art Unit: 1646

| | | | | | |
|----|----|-----------|---------|------------|---|
| | FT | DOMAIN | 505 | 522 | CYTOPLASMIC (POTENTIAL). |
| | FT | TRANSMEM | 523 | 543 | II (POTENTIAL). |
| | FT | DOMAIN | 544 | 551 | EXTRACELLULAR (POTENTIAL). |
| | FT | TRANSMEM | 552 | 572 | III POTENTIAL. |
| 5 | FT | DOMAIN | 573 | 597 | CYTOPLASMIC (POTENTIAL). |
| | FT | TRANSMEM | 598 | 618 | IV (POTENTIAL). |
| | FT | DOMAIN | 619 | 654 | EXTRACELLULAR (POTENTIAL). |
| | FT | TRANSMEM | 655 | 675 | V (POTENTIAL). |
| | FT | DOMAIN | 676 | 691 | CYTOPLASMIC (POTENTIAL). |
| 10 | FT | TRANSMEM | 692 | 712 | VI (POTENTIAL). |
| | FT | DOMAIN | 713 | 720 | EXTRACELLULAR (POTENTIAL). |
| | FT | TRANSMEM | 721 | 741 | VII (POTENTIAL). |
| | FT | DOMAIN | 742 | 941 | CYTOPLASMIC (POTENTIAL). |
| | FT | DOMAIN | 781 | 819 | COILED COIL (POTENTIAL). |
| 15 | FT | CARBOHYD | 90 | 90 | N-LINKED (GLCNAC. . .) (POTENTIAL). |
| | FT | CARBOHYD | 298 | 298 | N-LINKED (GLCNAC. . .) (POTENTIAL). |
| | FT | CARBOHYD | 389 | 389 | N-LINKED (GLCNAC. . .) (POTENTIAL). |
| | FT | CARBOHYD | 404 | 404 | N-LINKED (GLCNAC. . .) (POTENTIAL). |
| | FT | CARBOHYD | 453 | 453 | N-LINKED (GLCNAC. . .) (POTENTIAL). |
| 20 | FT | VARSP LIC | 902 | 927 | MISSING (IN ISOFORM 2B). |
| | FT | VARSP LIC | 929 | 941 | HVPPSFRVMVSGL -> TTLGRGVCCRNTVGSGCGEAGHHG |
| | FT | | | | WPLRTTRMALRWTGRGRRLGT (IN ISOFORM 2C). |
| | FT | VARIANT | 628 | 628 | Y -> F. |
| | FT | | | | /FTid=VAR_010148. |
| 25 | FT | VARIANT | 869 | 869 | T -> A. |
| | FT | | | | /FTid=VAR_010149. |
| | FT | CONFLICT | 6 | 6 | S -> R (IN REF. 5). |
| | FT | CONFLICT | 12 | 12 | P -> R (IN REF. 5). |
| | FT | CONFLICT | 424 | 424 | G -> E (IN REF. 3). |
| 30 | SQ | SEQUENCE | 941 AA; | 105821 MW; | 09F1773DB0673C5D CRC64; |

LOCUS AF056085 5786 bp mRNA PRI 08-OCT-1998
DEFINITION Homo sapiens GABA-B receptor mRNA, complete cds.
ACCESSION AF056085
NID g3719225
KEYWORDS .
SOURCE human.

ORGANISM Homo sapiens
Eukaryota; Metazoa; Chordata; Vertebrata; Mammalia; Eutheria;
Primates; Catarrhini; Hominidae; Homo.
REFERENCE 1 (bases 1 to 5786)
AUTHORS Clark, J.C., Lam, A. and Bonner, T.I.
TITLE gb2, a second GABA-B receptor
JOURNAL Unpublished
REFERENCE 2 (bases 1 to 5786)
AUTHORS Clark, J.C., Lam, A. and Bonner, T.I.
TITLE Direct Submission
JOURNAL Submitted (27-MAR-1998) Section on Genetics, NIMH, Bldg 36, Rm
3D06, MSC 4094, Bethesda, MD 20892-4094, USA

FEATURES Location/Qualifiers
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/map="D9S287-D9S176"
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CDS 458..3283
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variants of the carboxyl terminal are encoded by GenBank
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polyA_signal 5760..5765
polyA_site 5786
BASE COUNT 1415 a 1670 c 1474 g 1227 t
ORIGIN

Query Match 95.3%; Score 3317.8; DB 12; Length 5786;
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| Qy | 126 | | cgccgcccggccgttctgagccgagccggaaccctagcccagacggagccggggcccg | 185 |
| Db | 291 | | CGCCGCCGCGGCCGTTCTGAGCCGAGCCGGAACCTAGCCCAGACGGAGCCGGGGCCCG | 350 |
| Qy | 186 | | ggccggcgccattgcgcggcgccgcgggaagaccttggcgcgggcgggcgccggggcc | 245 |
| Db | 351 | | GGCCGGCGCCATTGCGCGGGCGCCGCGGAAGACCTTGGCGCGGGCGGCGGGCCGGGCC | 410 |
| Qy | 246 | | aggccatgcgggcccagtgagccggcgcccgagcccggcgcgccatggcttccccgc | 305 |
| Db | 411 | | AGGCCATGCGGGCCGAGTGAGCCGGCGCCCGCAGCCCAGGCGCGGCATGGCTTCCCCGC | 470 |
| Qy | 306 | | ggagctccgggagcccggcgccgcgcgcgcgcgcacccgcgcgcgcgcgcctgctac | 365 |
| Db | 471 | | GGAGCTCCGGGAGCCCGGGCGCCGCCGCCGCCGCCACCGCCGCCCGCGCCTGCTAC | 530 |
| Qy | 366 | | tgctactgctgctgccgctgctgctgcctctggcgccccggggcctggggctgggcgcg | 425 |
| Db | 531 | | TGCTACTGCTGCTGCCGCTGCTGCTGCCTCTGGCGCCCGGGGCTGGGGCTGGGCGCGG | 590 |
| Qy | 426 | | gcgccccccggcgccgcccagcagcccgccgctctccatcatgggcctcatgccgtca | 485 |
| Db | 591 | | GCGCCCCCGGCCGCCGCCAGCAGCCCGCCGCTCTCCATCATGGGCCTCATGCCGCTCA | 650 |
| Qy | 486 | | ccaaggaggtggccaagggcagcatcgggcgcggtgtgctccccgcggtggaactggcca | 545 |
| Db | 651 | | CCAAGGAGGTGGCCAAGGGCAGCATCGGGCGCGGTGTGCTCCCCGCCGTGGAAGTGGCCA | 710 |
| Qy | 546 | | tcgagcagatccgcaacgagtcactcctgcgccctacttcctcgacctgcggctctatg | 605 |
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| Qy | 606 | | acacggagtgcgacaacgcaaaagggttgaaagccttctacgatgcaataaaatacgggc | 665 |
| Db | 771 | | ACACGGAGTGCGACAACGCAAAAGGGTTGAAAGCCTTCTACGATGCAATAAAATACGGGC | 830 |
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| Db | 831 | | CGAACCCTTGATGGTGTTTGGAGGCGTCTGTCCATCCGTACATCCATCATTGCAGAGT | 890 |
| Qy | 726 | | ccctccaaggctggaatctggtgcagcttcttttctgtgcaaccacgcctgttctagccg | 785 |
| Db | 891 | | CCCTCCAAGGCTGGAATCTGGTGCAGCTTCTTTTGCTGCAACCACGCCTGTTCTAGCCG | 950 |
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| Db | 951 | | ATAAGAAAAAATACCCTTATTTCTTTGCGACCGTCCCATCAGACAATGCGGTGAATCCAG | 1010 |
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LOCUS HSA012188 2826 bp mRNA PRI 19-OCT-1998
 DEFINITION Homo sapiens mRNA for GABAB receptor, subunit 2.
 ACCESSION AJ012188
 NID g3776097
 KEYWORDS GABAB receptor; gabab-R2 gene; subunit 2.
 SOURCE human.
 ORGANISM Homo sapiens
 Eukaryota; Metazoa; Chordata; Vertebrata; Mammalia; Eutheria;
 Primates; Catarrhini; Hominidae; Homo.
 REFERENCE 1 (bases 1 to 2826)
 AUTHORS White, J.H., Wise, A., Main, M.J., Green, A., Fraser, N.J., Disney, G.H.,
 Barnes, A.A., Emson, P., Foord, S.M. and Marshall, F.H.
 TITLE Heterodimerisation is required to form a functional GABAB receptor
 JOURNAL Unpublished
 REFERENCE 2 (bases 1 to 2826)
 AUTHORS Fraser, N.J.
 TITLE Direct Submission
 JOURNAL Submitted (16-OCT-1998) Fraser N.J., Receptor Systems, Cellular
 Sciences, GlaxoWellcome, Medicines Research Centre, Gunnels Wood
 Road, Stevenage, Herts. SG1 2NY, U.K
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 /product="GABAB receptor, subunit 2"
 BASE COUNT 697 a 841 c 719 g 569 t
 ORIGIN

Query Match

81.2%; Score 2824.4; DB 12; Length 2826;

Db 841 ATTCCGGGCTGGTACGAGCCTTCTTGGTGGGAGCAGGTGCACACGGAAGCCAACTCATCC 900
 Qy 1193 cgctgcctccggaagaatctgcttgctgccatggagggctacattggcgtggatttcgag 1252
 |||||
 Db 901 CGCTGCCTCCGGAAGAATCTGCTTGCTGCCATGGAGGGCTACATTGGCGTGGATTTCGAG 960
 Qy 1253 cccctgagctccaagcagatcaagaccatctcaggaaagactccacagcagtatgagaga 1312
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 Db 961 CCCCTGAGCTCCAAGCAGATCAAGACCATCTCAGGAAAGACTCCACAGCAGTATGAGAGA 1020
 Qy 1313 gagtacaacaacaagcggtcaggcgtggggcccagcaagttccacgggtacgcctacgat 1372
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 Db 1021 GAGTACAACAACAAGCGGTCAGGCGTGGGGCCCAGCAAGTTCCACGGGTACGCCTACGAT 1080
 Qy 1373 ggcattctgggtcatcgccaagacactgcagagggccatggagacactgcatgccagcagc 1432
 |||||
 Db 1081 GGCATCTGGGTCATCGCCAAGACACTGCAGAGGGCCATGGAGACACTGCATGCCAGCAGC 1140
 Qy 1433 cggcaccagcggatccaggacttcaactacacggaccacacgctgggcaggatcatcctc 1492
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 Db 1141 CGGCACCAGCGGATCCAGGACTTCAACTACACGGACCACACGCTGGGCAGGATCATCCTC 1200
 Qy 1493 aatgccatgaacgagaccaacttcttcggggtcacgggtcaagttgtattccggaatggg 1552
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 Db 1201 AATGCCATGAACGAGACCAACTTCTTCGGGGTCACGGGTCAAGTTGTATTCCGGAATGGG 1260
 Qy 1553 gagagaatggggaccattaaatttactcaatttcaagacagcagggaggtgaaggtggga 1612
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 Db 1261 GAGAGAATGGGGACCATTAAATTTACTCAATTTCAAGACAGCAGGGAGGTGAAGGTGGGA 1320
 Qy 1613 gagtacaacgctgtggccgacacactggagatcatcaatgacaccatcaggttccaagga 1672
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 Db 1321 GAGTACAACGCTGTGGCCGACACACTGGAGATCATCAATGACACCATCAGGTTCCAAGGA 1380
 Qy 1673 tccgaaccaccaaagacaagaccatcatcctggagcagctgcggaagatctccctacct 1732
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 Db 1381 TCCGAACCACCAAAGACAAGACCATCATCCTGGAGCAGCTGCGGAAGATCTCCCTACCT 1440
 Qy 1733 ctctacagcatcctctctgcctcaccatcctcgggatgatcatggccagtgcctttctc 1792
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 Db 1441 CTCTACAGCATCCTCTCTGCCCTCACCATCCTCGGGATGATCATGGCCAGTGCTTTTCTC 1500
 Qy 1793 ttcttcaacatcaagaaccggaatcagaagctcataaagatgtcgagtccatacatgaac 1852
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 Db 1501 TTCTTCAACATCAAGAACCGGAATCAGAAGCTCATAAAGATGTCGAGTCCATACATGAAC 1560
 Qy 1853 aaccttatcatccttggagggatgctctcctatgcttccatatttctctttggccttgat 1912
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 Db 1561 AACCTTATCATCCTTGGAGGGATGCTCTCCTATGCTTCCATATTTCTCTTTGGCCTTGAT 1620
 Qy 1913 ggatcctttgtctctgaaaagacctttgaaacactttgcacgctcaggacctggattctc 1972
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 Db 1621 GGATCCTTTGTCTCTGAAAAGACCTTTGAAACACTTTGCACCGTCAGGACCTGGATTCTC 1680
 Qy 1973 accgtgggctacacgaccgcttttggggccatgtttgcaaagacctggagagtccacgcc 2032
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 Db 1681 ACCGTGGGCTACACGACCGCTTTTGGGGCCATGTTTGCAAAGACCTGGAGAGTCCACGCC 1740
 Qy 2033 atcttcaaaaatgtgaaaatgaagaagaagatcatcaaggaccagaaaactgcttgtgatc 2092
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 Db 1741 ATCTTCAAAAATGTGAAAATGAAGAAGAAGATCATCAAGGACCAGAACTGCTTGTGATC 1800

| | | | |
|----|------|--|------|
| Qy | 2093 | gtggggggcatgctgctgatcgacctgtgtatcctgatctgctggcaggctgtggacccc | 2152 |
| | | | |
| Db | 1801 | GTGGGGGGCATGCTGCTGATCGACCTGTGTATCCTGATCTGCTGGCAGGCTGTGGACCCC | 1860 |
| Qy | 2153 | ctgcgaaggacagtggagaagtacagcatggagccggacccagcaggacgggatctctcc | 2212 |
| | | | |
| Db | 1861 | CTGCGAAGGACAGTGGAGAAGTACAGCATGGAGCCGGACCCAGCAGGACGGGATATCTCC | 1920 |
| Qy | 2213 | atccgccctctcctggagcactgtgagaacacccatatgaccatctggcttggcatcgtc | 2272 |
| | | | |
| Db | 1921 | ATCCGCCCTCTCCTGGAGCACTGTGAGAACACCCATATGACCATCTGGCTTGGCATCGTC | 1980 |
| Qy | 2273 | tatgcctacaagggacttctcatgttgttcggttgtttcttagcttgggagacccgcaac | 2332 |
| | | | |
| Db | 1981 | TATGCCTACAAGGGACTTCTCATGTTGTTCGGTTGTTTCTTAGCTTGGGAGACCCGCAAC | 2040 |
| Qy | 2333 | gtcagcatccccgcactcaacgacagcaagtacatcgggatgagtgctctacaacgtgggg | 2392 |
| | | | |
| Db | 2041 | GTCAGCATCCCCGCACTCAACGACAGCAAGTACATCGGGATGAGTGTCTACAACGTGGGG | 2100 |
| Qy | 2393 | atcatgtgcatcatcggggccgctgtctccttcctgacccgggaccagcccaatgtgcag | 2452 |
| | | | |
| Db | 2101 | ATCATGTGCATCATCGGGGCCGCTGTCTCCTTCCTGACCCGGGACCAGCCCAATGTGCAG | 2160 |
| Qy | 2453 | ttctgcatcggtgctctggtcatcatcttctgcagcaccatcacctctgcctgggtattc | 2512 |
| | | | |
| Db | 2161 | TTCTGCATCGTGGCTCTGGTCATCATCTTCTGCAGCACCATCACCTCTGCCTGGTATTC | 2220 |
| Qy | 2513 | gtgccgaagctcatcacctgagaacaaacccagatgcagcaacgcagaacaggcgattc | 2572 |
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| Db | 2221 | GTGCCGAAGCTCATCACCTGAGAACAAACCCAGATGCAGCAACGCAGAACAGGCGATTCT | 2280 |
| Qy | 2573 | cagttcactcagaatcagaagaaagaagattctaaaacgtccacctcggtcaccagtgtg | 2632 |
| | | | |
| Db | 2281 | CAGTTCACTCAGAATCAGAAGAAAGAAGATTCTAAAACGTCCACCTCGGTACCCAGTGTG | 2340 |
| Qy | 2633 | aaccaagccagcacatcccgccctggagggcctacagtcagaaaaccatcgccctgcgaatg | 2692 |
| | | | |
| Db | 2341 | AACCAAGCCAGCACATCCCGCCTGGAGGGCCTACAGTCAGAAAACCATCGCCTGCGAATG | 2400 |
| Qy | 2693 | aagatcacagagctggataaagacttggagaggtcaccatgcagctgcaggacacacca | 2752 |
| | | | |
| Db | 2401 | AAGATCACAGAGCTGGATAAAGACTTGAAGAGGTACCATGCAGCTGCAGGACACACCA | 2460 |
| Qy | 2753 | gaaaagaccacctacattaaacagaaccactaccaagagctcaatgacatcctcaacctg | 2812 |
| | | | |
| Db | 2461 | GAAAAGACCACCTACATTAAACAGAACCACTACCAAGAGCTCAATGACATCCTCAACCTG | 2520 |
| Qy | 2813 | ggaaacttcactgagagcacagatggaggaaaggccatttttaaaaaatcacctcgatcaa | 2872 |
| | | | |
| Db | 2521 | GGAAACTTCACTGAGAGCACAGATGGAGGAAAGGCCATTTTAAAAAATCACCTCGATCAA | 2580 |
| Qy | 2873 | aatccccagctacagtggaaacacaacagagccctctcgaacatgcaaagatcctatagaa | 2932 |
| | | | |
| Db | 2581 | AATCCCCAGCTACAGTGAACACAACAGAGCCCTCTCGAACATGCAAAGATCCTATAGAA | 2640 |
| Qy | 2933 | gatataaactctccagaacacatccagcgctcggtgtccctccagctccccatcctccac | 2992 |
| | | | |
| Db | 2641 | GATATAAACTCTCCAGAACACATCCAGCGTCGGCTGTCCCTCCAGCTCCCCATCCTCCAC | 2700 |
| Qy | 2993 | cacgcctacctcccatccatcgaggcggtggacgccagctgtgtcagcccctgcgtcagc | 3052 |

Db 2701 CACGCCTACCTCCCATCCATCGGAGGCGTGGACGCCAGCTGTGTCAGCCCCTGCGTCAGC 2760
Qy 3053 cccaccgccagccccgccacagacatgtgccaccctccttcgagtcattggtctcgggc 3112
Db 2761 CCCACCGCCAGCCCCGCCACAGACATGTGCCACCCTCCTTCCGAGTCATGGTCTCGGGC 2820
Qy 3113 ctgtaa 3118
Db 2821 CTGTAA 2826

| | | | |
|----|------|---|------|
| Db | 23 | CCGGAGCCGAGCCGGGGCCCGTGCCGGCGCCATTGCGCGGGRGCCGCGGGCAA | 82 |
| Qy | 225 | cgcggggcgggcgggcgggccaggccatgcgggcccagtgagccggcgcccgagccgcg | 284 |
| Db | 83 | CGCCGGGCGGCGGGCCGGGCCAGGCCATGCGGGCCGAGTGAGCTGGCGCCCGCAGCCCGC | 142 |
| Qy | 285 | ggcgcggcgatggcttccccgcggagctccgggcagcccgggcgccgcgcgcgcgcgcac | 344 |
| Db | 143 | GGCGCGGCATGGCTTCCCCGCCGAGCTCCGGGCAGCCCCGGCGCCGCGCCGCGCG---C | 199 |
| Qy | 345 | cgcgcgcgcgcgcgcctgctactgctactgctgctgcccgtgctgctgctgctgctgctg | 404 |
| Db | 200 | CGCCGCCCGCGCGCCTGCTGCTGCCCCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTG | 259 |
| Qy | 405 | gggcctggggctgggcgcggggcgcccccgccgcgcgcgcgcgcgcgcgcgcgcgcgcgc | 464 |
| Db | 260 | GGGCCTGGGGCTGGACGCGGGGCGCCCCCGGCCGCCGCCAGCAGCCCGCCGCTCTCCA | 319 |
| Qy | 465 | tcatgggcctcatgccgctcaccaaggaggtggccaagggcagcatcgggcgcggtgtgc | 524 |
| Db | 320 | TCATGGGCCTCATGCCGCTCACCAAGGAGGTGGCCAAGGGCAGCATCGGGCGCGGCGTGC | 379 |
| Qy | 525 | tccccgcgctggaactggccatcgagcagatccgcaacgagtcactcctgcgcccctact | 584 |
| Db | 380 | TCCCCGCCGTGGAGCTAGCCATCGAGCAGATCCGCAACGAGTCACTCCTGCGCCCCTACT | 439 |
| Qy | 585 | tcctcgacctgoggctctatgacacggagtgcgacaacgcaaaaggggtgaaagccttct | 644 |
| Db | 440 | TCCTGGACCTGCGACTCTATGACACCGAGTGTGACAATGCAAAGGGACTGAAAGCCTTCT | 499 |
| Qy | 645 | acgatgcaataaaatacggggccgaaccacttgatggtgtttggaggcgtctgtccatccg | 704 |
| Db | 500 | ATGACGCAATAAAGTATGGGCGCAACCATTTGATGGTGTGTTGGAGGCGTCTGTCCGTCTG | 559 |
| Qy | 705 | tcacatccatcattgcagagtcacctccaaggctggaatctggtgcagctttcttttgctg | 764 |
| Db | 560 | TCACATCTATTATCGCGGAGTCCCTCCAAGGCTGGAATCTGGTGCAGCTTTCCTTCGCCG | 619 |
| Qy | 765 | caaccacgcctgttctagccgataagaaaaatacccttatcttcttcggaccgctcccat | 824 |
| Db | 620 | CCACCACGCTGTTCTTGCGGATAAGAAGAAGTACCCGTATTTCTTCCGGACGGTGCCGT | 679 |
| Qy | 825 | cagacaatgcggtgaatccagccattctgaagttgctcaagcactaccagtggaagcgcg | 884 |
| Db | 680 | CAGACAACGCGGTGAACCCCGCCATCCTGAAGCTCCTGAAGCACTTCCGCTGGCGGCGTG | 739 |
| Qy | 885 | tgggcacgctgacgcaagacgttcagaggttctctgaggtgcggaatgacctgactggag | 944 |
| Db | 740 | TGGGCACACTCACGCAGGACGYGCAGCGCTTCTCCGAGGTGAGGAATGACCTGACTGGGG | 799 |
| Qy | 945 | ttctgtatggcgaggacattgagatttcagacaccgagagcttctccaacgatccctgta | 1004 |
| Db | 800 | TTCTGTATGGGGAAGATATTGAGATCTCAGACACAGAGAGTTTCTCCAATGATCCCTGCA | 859 |
| Qy | 1005 | ccagtgtcaaaaagctgaaggggaatgatgtgcggatcatccttggccagtttgaccaga | 1064 |
| Db | 860 | CCAGCGTCAAAAAGCTCAAGGGGAATGACGTGCGGATCATCCTTGGCCAGTTTGACCAGA | 919 |
| Qy | 1065 | atatggcagcaaaagtgttctgttgatgcatacaggagaacatgtatggtagtaaatatc | 1124 |
| Db | 920 | ATATGGCAGCAAAAAGTCTTCTGTTGTGCCTTCGAGGAGAGCATGTTTGGCAGCAAGTACC | 979 |

[illegible]

| | | | |
|----|------|---|------|
| Db | 1880 | TCCATGCCATCTTCAAAAATGTGAAGATGAAGAAGAAGATCATCAAAGACCAGAAGCTGC | 1939 |
| Qy | 2085 | ttgtgatcgtggggggcatgctgctgatcgacctgtgtatcctgatctgctggcaggctg | 2144 |
| Db | 1940 | TTGTGATTGTGGGGGGCATGCTGCTCATCGACCTGTGCATCCTGATCTGTTGGCAGGCTG | 1999 |
| Qy | 2145 | tggacccccctgcgaaggacagtggagaagtacagcatggagccggacccagcaggacggg | 2204 |
| Db | 2000 | TGGACCCCCCTGCGGAGGACAGTGGAGAGGTACAGCATGGAGCCGGACCCAGCAGGCCGGG | 2059 |
| Qy | 2205 | atatctccatccgccctctcctggagcactgtgagaacacccatatgaccatctggcttg | 2264 |
| Db | 2060 | ACATCTCCATCCGCCCATTTGCTGGAACACTGCGAAAACACCCACATGACCATCTGGCTTG | 2119 |
| Qy | 2265 | gcacgtctatgcctacaagggacttctcatgttgttcggttgtttcttagcttgggaga | 2324 |
| Db | 2120 | GCATTGTCTACGCCTACAAGGGGCTCCTCATGCTATTTCGGTTGTTTCTTGGCATGGGAAA | 2179 |
| Qy | 2325 | cccgcaacgtcagcatccccgcactcaacgacagcaagtacatcgggatgagtgtctaca | 2384 |
| Db | 2180 | CCCGCAATGTGAGCATCCCTGCCCTCAACGACAGCAAGTACATCGGCATGAGTGTGTACA | 2239 |
| Qy | 2385 | acgtggggatcatgtgcatcatcggggccgctgtctccttcctgacccgggaccagccca | 2444 |
| Db | 2240 | ATGTGGGGATCATGTGCATCATCGGGGCTGCTGCTCCTTCCTGACGCGTGACCAGCCCA | 2299 |
| Qy | 2445 | atgtgcagttctgcacgttggtctctggtcatcatcttctgcagcaccatcacctctgcc | 2504 |
| Db | 2300 | ACGTGCAGTTCTGCATCGTGGCCCTGGTCATCATCTTCTGCAGCACCATCACTCTCTGCC | 2359 |
| Qy | 2505 | tggatttcgtgccgaagctcatcacctgagaacaaaccagatgcagcaacgcagaaca | 2564 |
| Db | 2360 | TGGTGTTTGTGCCAAAGCTCATCACTCTGAGGACAAACCTGACGCAGCCACTCAGAACA | 2419 |
| Qy | 2565 | ggcgattccagttcactcagaatcagaagaaagaagattctaaaacgtccacctcggtca | 2624 |
| Db | 2420 | GGCGTTTCCAGTTCACACAGAACCAGAAGAAAGAAGATTCTGAAGACCTCCACTTCAGTCA | 2479 |
| Qy | 2625 | ccagtgtgaaccaagccagcacatccgcctggagggcctacagtcaaaaaaccatcgcc | 2684 |
| Db | 2480 | CCAGCGTGAACCAGGCGAGCACGTACGCCTGGAGGGACTGCAGTCAGAAAACCAACGCC | 2539 |
| Qy | 2685 | tgcgaatgaagatcacagagctggataaagacttgaagaggtcaccatgcagctgcagg | 2744 |
| Db | 2540 | TTCGAATGAAGATCACAGAGCTGGACAAAGACTTGAAGAAGTCACCATGCAGCTACAAG | 2599 |
| Qy | 2745 | acacaccagaaaaagaccacctacattaacagaaccactaccaagagctcaatgacatcc | 2804 |
| Db | 2600 | ACACACCAGAGAAGACCACATACATCAAACAGAATCACTACCAAGAGCTCAACGACATCC | 2659 |
| Qy | 2805 | tcaacctgggaaacttcactgagagcacagatggaggaaaggccattttaaaaaatcacc | 2864 |
| Db | 2660 | TCAGCTTGGGCAACTTCACAGAGAGCACAGATGGAGGAAAGGCCATTCTAAAAAATCACC | 2719 |
| Qy | 2865 | tcgatcaaaatccccagctacagtggaacacaacagagccctctcgaacatgcaaagatc | 2924 |
| Db | 2720 | TCGATCAAAACCCCCAGCTCCAGTGGAACACGACAGAGCCCTCAAGAACATGCAAAGACC | 2779 |
| Qy | 2925 | ctatagaagatataaactctccagaacacatccagcgtcggtgtccctccagctcccca | 2984 |

| | | | |
|----|------|--|------|
| Db | 2780 | CCATAGAAGACATCAACTCCCCGGAGCACATCCAGCGCCGGCTGTCTGCTCCAGCTCCCCA | 2839 |
| Qy | 2985 | tctctccaccacgcctacctcccattccatcgaggcggtggacgccagctgtgtcagcccct | 3044 |
| | | | |
| Db | 2840 | TCCTTCACCACGCCTACCTCCCATCCATCGGAGGCGTGGATGCCAGCTGCGTCAGCCCCT | 2899 |
| Qy | 3045 | gcgtcagccccaccgccagcccccgccacagacatgtgccaccctccttccgagtcattgg | 3104 |
| | | | |
| Db | 2900 | GTGTCAGCCCTACCGCCAGCCCTCGCCACAGACACGTACCACCCTCCTTCCGAGTCATGG | 2959 |
| Qy | 3105 | tctcgggcctgtaagggtggggggcctgggcccggggcctcccccggtgacagaaccacac | 3164 |
| | | | |
| Db | 2960 | TCTCGGGCCTGTAGGGGTGGGAGGCCTGGGGCCGGGGCCT-CCCCGGGACAGCACCATGC | 3018 |
| Qy | 3165 | tgggcagaggggtctgctgcagaaacactgtcggtctctggtgcggagaagctgggcacc | 3224 |
| | | | |
| Db | 3019 | TGGGCCAAGGCGCCTGCCACAGGCACACTGACGGC-----GGCGAGAAGCTGGGCACC | 3071 |
| Qy | 3225 | atggctggcctctcaggaccactcggtatggcactcaggtggacaggacgggggcaggggga | 3284 |
| | | | |
| Db | 3072 | ATG--CTGCCTCTCCAGACTGCTGGAATGGCGCTCA-----GGCAGAGCGG | 3115 |
| Qy | 3285 | gaacttggcacctgacctcgagccttatttgtgaagtccttatttcttcacaaagaagagg | 3344 |
| | | | |
| Db | 3116 | GACTCGGCACC-GACCTCGAGCCTTATCTGTGAAGGTCTTACT--CTCACAGAGGAGAGG | 3172 |
| Qy | 3345 | aacggaaatgggacgtcttctccttaacatctgcaacaaggaggcgctgggatatc | 3399 |
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| Db | 3173 | AATGACAATGACTTCTCCTTCTTGGCGTCTGCAACAAGAGGAGTTGGGATGTC | 3227 |

LOCUS AF095723 743 bp mRNA PRI 08-OCT-1998
 DEFINITION Homo sapiens GABA-B receptor splice variant 1 mRNA, partial cds.
 ACCESSION AF095723
 NID g3719471
 KEYWORDS .
 SOURCE human.
 ORGANISM Homo sapiens
 Eukaryota; Metazoa; Chordata; Vertebrata; Mammalia; Eutheria;
 Primates; Catarrhini; Hominidae; Homo.
 REFERENCE 1 (bases 1 to 743)
 AUTHORS Clark, J.C., Lam, A. and Bonner, T.I.
 TITLE gb2, a second GABA-B receptor
 JOURNAL Unpublished
 REFERENCE 2 (bases 1 to 743)
 AUTHORS Clark, J.C., Lam, A. and Bonner, T.I.
 TITLE Direct Submission
 JOURNAL Submitted (27-MAR-1998) Section on Genetics, National Institute of
 Mental Health, Bldg 36, Rm 3D06, MSC 4094, Bethesda, MD 20892-4090,
 USA
 FEATURES Location/Qualifiers
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 ORIGIN

Query Match 18.8%; Score 653.4; DB 12; Length 743;
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LOCUS (LOC): AF069755 GenBank (R)
 GenBank ACC. NO. (GBN): AF069755
 CAS REGISTRY NO. (RN): 222290-10-0
 SEQUENCE LENGTH (SQL): 3075
 MOLECULE TYPE (CI): mRNA; linear
 DIVISION CODE (CI): Primates
 DATE (DATE): 7 Apr 1999
 DEFINITION (DEF): Homo sapiens orphan G protein-coupled receptor
 HG20 (HG20) mRNA, complete cds.
 SOURCE: human.
 ORGANISM (ORGN): Homo sapiens
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
 Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
 Homo
 NUCLEIC ACID COUNT (NA): 729 a 925 c 830 g 591 t
 REFERENCE: 1 (bases 1 to 3075)
 AUTHOR (AU): Ng, G.Y.K.; McDonald, T.; Bonnert, T.; Rigby, M.;
 Heavens, R.; Whiting, P.; Chateaufneuf, A.; Coulombe, N.;
 Kargmen, S.; Caskey, T.; Evans, J.; O'Neill, G.P.; Liu, Q.
 TITLE (TI): Cloning of a novel G-protein-coupled receptor GPR 51
 resembling GABAB receptors expressed predominantly in
 nervous tissues and mapped proximal to the hereditary
 sensory neuropathy type 1 locus on chromosome 9
 JOURNAL (SO): Genomics, 56 (3), 288-295 (1999)
 REFERENCE: 2 (bases 1 to 3075)
 AUTHOR (AU): McDonald, T.; Liu, Q.
 TITLE (TI): Direct Submission
 JOURNAL (SO): Submitted (03-JUN-1998) Human Genetics, Merck Research
 Labs, West Point, PA 19486, USA

FEATURES (FEAT):

| Feature Key | Location | Qualifier |
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| gene | 1..3075 | /gene="HG20" |
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SEQUENCE (SEQ):

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| 61 | ttgcgcgggc | gccgcgggaa | gaccttgccg | cggggcgccg | ggccgggcca | ggccatgcgg |
| 121 | gccgagtgag | ccggcgcccg | cagcccgccg | cgccgcatgg | cttcccccg | gaggtccggg |
| 181 | cagccagggc | ggccgcgcgc | gccgccaccg | ccgcccgcgc | gcctgctact | gctactgctg |
| 241 | ctgccgctgc | tgtgcctct | ggcgcccggg | gcctggggct | ggcgcgggg | cgcccccg |
| 301 | ccgccgcca | gcagcccgcc | gctctccatc | atgggcctca | tgccgctcac | caaggagggtg |
| 361 | gccaagggca | gcatcgggcg | cgggtgtgctc | cccgcctgg | aactggccat | cgagcagatc |
| 421 | cgcaacgagt | cactcctgcg | cccctacttc | ctcgacctgc | ggctctatga | cacggagtgc |
| 481 | gacaacgcaa | aagggttgaa | agccttctac | gatgcaataa | aatacgggcc | gaaccaattg |
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| 781 | tctgaggtgc | ggaatgacct | gactggagtt | ctgtatggcg | aggacattga | gatttcagac |
| 841 | accgagagct | tctccaacga | tccctgtacc | agtgtcaaaa | agctgaagg | gaatgatgtg |
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| 961 | gaggagaaca | tgtatggtag | taaatatcag | tggatcattc | cgggctggtg | cgagccttct |
| 1021 | tgggtgggagc | aggtgcacac | ggaagccaac | tcatcccgc | gcctccggaa | gaatctgctt |
| 1081 | gctgccatgg | agggctacat | tggcgtggat | ttcgagcccc | tgagctccaa | gcagatcaag |
| 1141 | accatctcag | gaaagactcc | acagcagtat | gagagagagt | acaacaacaa | gcggtcaggc |
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| 1321 | aactacacgg | accacacgct | gggcaggatc | atcctcaatg | ccatgaacga | gaccaacttc |
| 1381 | ttcgggggtca | cgggtcaagt | tgtattccgg | aatggggaga | gaatggggac | cattaaattt |
| 1441 | actcaatttc | aagacagcag | ggaggtgaag | gtgggagagt | acaacgctgt | ggccgacaca |
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| 1561 | atcatcctgg | agcagctgcg | gaagatctcc | ctacctctct | acagcatcct | ctctgccctc |
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| 1681 | cagaagctca | taaagatgtc | gagtcatac | atgaacaacc | ttatcatcct | tggagggatg |
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LOCUS HSC1HH042 326 bp RNA EST 21-SEP-1995
 DEFINITION H. sapiens partial cDNA sequence; clone c-lhh04, mRNA sequence.
 ACCESSION Z39716
 NID g565511
 KEYWORDS EST; partial cDNA sequence; transcribed sequence fragment.
 SOURCE human.
 ORGANISM Homo sapiens
 Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata;
 Vertebrata; Eutheria; Primates; Catarrhini; Hominidae; Homo.
 REFERENCE 1 (bases 1 to 326)
 AUTHORS Genexpress.
 TITLE Direct Submission
 JOURNAL Submitted (24-OCT-1994) Genethon, B.P. 60, 91002 Evry Cedex France
 and Genetique Moleculaire et Biologie du developpement, CNRS UPR420
 B.P. 8, 94801 Villejuif Cedex France.E-mail: genexpress@genethon.fr
 REFERENCE 2 (bases 1 to 326)
 AUTHORS Genexpress.
 TITLE The Genexpress cDNA program
 JOURNAL Unpublished
 REFERENCE 3 (bases 1 to 326)
 AUTHORS Auffray,C., Behar,G., Bois,F., Bouchier,C., da Silva,C.,
 Devignes,M.D., Duprat,S., Houlgatte,R., Jumeau,M.N., Lamy,B.,
 Lorenzo,F., Mitchell,H., Mariage-Samson,R., Pietu,G., Pouliot,Y.,
 Sebastiani-Kabaktchis,C. and Tessier,A.
 TITLE IMAGE: molecular integration of the analysis of the human genome
 and its expression
 JOURNAL C. R. Acad. Sci. III, Sci. Vie 318 (2), 263-272 (1995)
 MEDLINE 95277534
 COMMENT Clone library from B.Souares, Psychiatry Dept. Columbia University
 USA;

Cloning_method: total mRNA was oligo-(dT) primed and directionally
 cloned 5' -> 3' into the HindIII -> NotI sites of the lafmid BA
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Sequencing_method: single read, full automatic;
 Primer: (-21)M13_universal;
 cDNA sequence complementary to mRNA (3'end)
 Stretch_removed: 27 T removed at sequence 5'end
 Normalization_method: Bento Soares, P.N.A.S in press;
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No significant homology found with :
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BASE COUNT 62 a 103 c 88 g 69 t 4 others
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LOCUS HSA012188 2826 bp mRNA PRI 19-OCT-1998
 DEFINITION Homo sapiens mRNA for GABAB receptor, subunit 2.
 ACCESSION AJ012188
 NID g3776097
 KEYWORDS GABAB receptor; gabab-R2 gene; subunit 2.
 SOURCE human.
 ORGANISM Homo sapiens
 Eukaryota; Metazoa; Chordata; Vertebrata; Mammalia; Eutheria;
 Primates; Catarrhini; Hominidae; Homo.
 REFERENCE 1 (bases 1 to 2826)
 AUTHORS White, J.H., Wise, A., Main, M.J., Green, A., Fraser, N.J., Disney, G.H.,
 Barnes, A.A., Emson, P., Foord, S.M. and Marshall, F.H.
 TITLE Heterodimerisation is required to form a functional GABAB receptor
 JOURNAL Unpublished
 REFERENCE 2 (bases 1 to 2826)
 AUTHORS Fraser, N.J.
 TITLE Direct Submission
 JOURNAL Submitted (16-OCT-1998) Fraser N.J., Receptor Systems, Cellular
 Sciences, GlaxoWellcome, Medicines Research Centre, Gunnels Wood
 Road, Stevenage, Herts. SG1 2NY, U.K
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 ORIGIN
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 Quality: 4518.00 Length: 941 Ratio: 4.801 Gaps: 0
 Percent Similarity: 100.000 Percent Identity: 100.000

LOCUS AB016161 3202 bp mRNA ROD 01-DEC-1998
 DEFINITION Rattus norvegicus mRNA for rat GABAB receptor 1d, complete cds.
 ACCESSION AB016161
 NID g3929914
 KEYWORDS rat GABAB receptor 1d.
 SOURCE Rattus norvegicus Cerebellum mRNA, clone_lib:Clontech rat
 cerebellum cDNA library clone:rat GABABR1d.
 ORGANISM Rattus norvegicus
 Eukaryota; Metazoa; Chordata; Vertebrata; Mammalia; Eutheria;
 Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
 REFERENCE 1 (sites)
 AUTHORS Isomoto, S., Kaibara, M., Yano, K. and Taniyama, K.
 TITLE Cloning and tissue distribution of novel isoform of rat GABAB
 receptors
 JOURNAL Biochem. Biophys. Res. Commun. (1998) In press
 REFERENCE 2 (bases 1 to 3202)
 AUTHORS Isomoto, S.
 TITLE Direct Submission
 JOURNAL Submitted (10-JUL-1998) to the DDBJ/EMBL/GenBank databases. Shojiro
 Isomoto, Nagasaki University School of Medicine, Third Department
 of Internal Medicine; Sakamoto 1-7-1, Nagasaki, Nagasaki 852-8102,
 Japan (Tel:+81-95-849-7047, Fax:+81-95-849-7048)
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 CDS 101. .2539
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 3'UTR 2540. .3202
 BASE COUNT 673 a 928 c 854 g 747 t
 ORIGIN

alignment_scores:

Quality: 1160.00 Length: 844
 Ratio: 2.075 Gaps: 19
 Percent Similarity: 66.232 Percent Identity: 35.190

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AC 075899;
DT 01-NOV-1998 (TREMBLREL. 08, CREATED)
DT 01-NOV-1998 (TREMBLREL. 08, LAST SEQUENCE UPDATE)
DT 01-NOV-1998 (TREMBLREL. 08, LAST ANNOTATION UPDATE)
DE GABA-B RECEPTOR.
OS HOMO SAPIENS (HUMAN).
OC EUKARYOTA; METAZOA; CHORDATA; VERTEBRATA; MAMMALIA; EUTHERIA;
OC PRIMATES; CATARRHINI; HOMINIDAE; HOMO.
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=BRAIN;
RA CLARK J.C., LAM A., BONNER T.I.;
RT "gb2, a second GABA-B receptor."
RL SUBMITTED (MAR-1998) TO EMBL/GENBANK/DBJ DATA BANKS.
DR EMBL; AF056085; G3719226; -.
SQ SEQUENCE 941 AA; 105821 MW; B3BE1D1F CRC32;

Query Match 100.0%; Score 4518; DB 2; Length 941;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 941; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy 121 IKYGNHLMVFGGVCPSVTSIIAESLQGNLVQLSFAATTPVLADKKKYPYFFRTVPDSN 180
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Qy 181 AVNPAILKLLKHYQWKRVTLTQDVQRFSEVRNDLTGVLYGEDIEISDTESFSNDPCTSV 240
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Qy 3082 gccaccctccttccgagtcattggtctcgggcctgtaaggggtggggggcctgggcccgggg 3141
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| Qy | 601 | VGGMLLIDLCILICWQAVDPLRRTVEKYSMEPD PAGRDISIRPLLEHCENTHMTIWL GIV | 660 |
| Db | 601 | VGGMLLIDLCILICWQAVDPLRRTVEKYSMEPD PAGRDISIRPLLEHCENTHMTIWL GIV | 660 |
| Qy | 661 | YAYKGLLMLFGCFLAWETRNV SIPALNDSKYIGMSVY NVGIMCIIGA AVSFLTRDQPNVQ | 720 |
| Db | 661 | YAYKGLLMLFGCFLAWETRNV SIPALNDSKYIGMSVY NVGIMCIIGA AVSFLTRDQPNVQ | 720 |
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| Db | 721 | FCIVALVII FCSITITLCLVFVPKLITLRTNPDAATQNR RFQFTQNQKKEDSKTSTSVTSV | 780 |
| Qy | 781 | NQASTSRLEGLQSENHRLRMKITELDKDLEEVTMQLQDTP EKTYYIKQNH YQELNDILNL | 840 |
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| Qy | 841 | GNFTESTDGGKAILKNHLDQNPQLQWNTTEPSRTCKDPI EDINSPEHIQRRLSLQLPILH | 900 |
| Db | 841 | GNFTESTDGGKAILKNHLDQNPQLQWNTTEPSRTCKDPI EDINSPEHIQRRLSLQLPILH | 900 |
| Qy | 901 | HAYLPSIGGVDASCVSPCVSPTASPRHRHVPPSFRVMV SGL | 941 |
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      | : | | | : : :| | | | | :| :| :| :| :| :| :| :| :| | |
Db 584 WRKTLEPWKLYATVGLLVGMDVLT LAIWQIVDPLHRTIETFAKEEPKEDIDVSILPQLEH 643

Qy 648 CENTHMTIWLGI VYAYKGLLMLFGCFLAWETRNV SIPALNDSKYIGMSVYNVGIMCIIGA 707
      | : | | | | :| :| :| :| :| :| :| :| :| :| :| :| :| :| :|
Db 644 CSSKKMNTWLGIFYGYKGLLLLLGIFLAYETKSVSTEKINDHRAVGMAIYNVAVLCLITA 703

Qy 708 AVSFLTRDQPNVQFCIVALVIIFCSTITLCLVFVPKLITLRTNPDAATQNR RFQFTQNQK 767
      :| : : | : | :| | :| | | :| :| :| :| :| :| :| :| :| :|
Db 704 PVTMILSSQQDAAFAFASLAIVFSSYITLVVLFVPKMRRRLITRGE-----WQSET 753

Qy 768 KEDSKTSTSVTSVNQASTSRLEGLQSENHRLRMKITELDKDLEEV TMQLQ 817
      : ||::| | : | : | | | :| :| :| :| :| :| :| :| :| :|
Db 754 QDTMKTGSS-TNNNEEEKSRL--LEKENRELEKIIAEKEERVSEL RHQLQ 800

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| | | | |
|----|------|---|------|
| Qy | 824 | tcagacaatgcggtgaatccagccattctgaagttgctcaagcactaccagtggaagcgc | 883 |
| | | | |
| Db | 361 | TCAGCCACACTCCACAACCCTACCCGCGTGAAACTCTTTGAAAAGTGGGGCTGGAAGAAG | 420 |
| Qy | 884 | gtgggcacgctgacgcaagacgttcagaggttctctgaggtgcggaatgacctgactgga | 943 |
| | | | |
| Db | 421 | ATTGCTACCATCCAGCAGACCACTGAGGTCTTCACTTCGACTCTGGACGACCTGGAGGAA | 480 |
| Qy | 944 | gttctgtatggcgaggacattgagatttcagacaccgagagcttctccaacgatccctgt | 1003 |
| | | | |
| Db | 481 | CGAGTGAAGGAGGCTGGAATTGAGATTACTTTCGCCAGAGTTTCTTCTCAGATCCAGCT | 540 |
| Qy | 1004 | accagtggtcaaaaagctgaaggggaatgatgtgcggatcatccttggccagtttgaccag | 1063 |
| | | | |
| Db | 541 | GTGCCCCTCAAAAACCTGAAGCGCCAGGATGCCCGAATCATCGTGGGACTTTTCTATGAG | 600 |
| Qy | 1064 | aatatggcagcaaaaagtgttctgttgtgcatacgaggagaacatgtatggtagtaaatat | 1123 |
| | | | |
| Db | 601 | ACTGAAGCCCGGAAAGTTTTTTGTGAGGTGTACAAGGAGCGTCTCTTTGGGAAGAAGTAC | 660 |
| Qy | 1124 | cagtggatcattccgggctggtacgagccttcttgggtgggagcaggtgcacacggaagcc | 1183 |
| | | | |
| Db | 661 | GTCTGGTTCTCTCATTGGGTGGTATGCTGACAATTGGTTCAAG-----ATCTACGAC | 711 |
| Qy | 1184 | aactcatcccgtgcctccggaagaatctgcttgcctgcatggagggctacattggcgtg | 1243 |
| | | | |
| Db | 712 | CCTTCTATCAACTGCACAGTGGATGAGATGACTGAGGCGGTGGAGGGCCACATCACAAC | 771 |
| Qy | 1244 | gatttcgagccccctgagctccaagcagatcaagaccatctcaggaaagactccacagcag | 1303 |
| | | | |
| Db | 772 | GAGATTGTCATGCTGAATCCTGCCAATACCCGAGCATTTCCAACATGACATCCCAGGAA | 831 |
| Qy | 1304 | tatgagagagagtacaacaacaagcgggtcagg-----cgtggggcccagcaagttccac | 1357 |
| | | | |
| Db | 832 | TTTGTGGAGAACTAACCAAGCGACTGAAAAGACACCCTGAGGAGACAGGAGGCTTCCAG | 891 |
| Qy | 1358 | gggtacgcctacgatggcatctgggtcatcgccaagacactgcagagggccatggagaca | 1417 |
| | | | |
| Db | 892 | GAGGCACCGCTGGCCTATGATGCCATCTGGGCCTTGGCACTGGCCCTGAACAAGACATCT | 951 |
| Qy | 1418 | ctgcatgccagcagccggcaccagcggatccaggacttcaactacacggaccacacgctg | 1477 |
| | | | |
| Db | 952 | GGAGGAGGCGGCCGTTCTGGTGTGCGCCTGGAGGACTTCAACTACAACAACCAGACCATT | 1011 |
| Qy | 1478 | ggcaggatcatcctcaatgccatgaacgagaccaacttcttcgggggtcacgggtcaagtt | 1537 |
| | | | |
| Db | 1012 | ACCGACCAATCTACCGGGCAATGAACTCTTCGTCTTTGAGGGTGTCTCTGGCCATGTG | 1071 |
| Qy | 1538 | gtattccggaatggggagagaatggggaccattaaatttactcaatttcaagacagcagg | 1597 |
| | | | |
| Db | 1072 | GTGTTTGATGCCAGCGCTCTCGGATGGCATGGACGCTTATCGAGCAGCTTCAGGGTGGC | 1131 |
| Qy | 1598 | gaggtgaagggtgggagagtacaacgctgtggccgacacactggagatcatcaatgacacc | 1657 |
| | | | |
| Db | 1132 | AGCTACAAGAAGATTGGCTACTATGACAGCACCAAGGATGATCTTTCCTGGTCCAAAACA | 1191 |
| Qy | 1658 | atcaggttccaaggatccgaaccacccaaaagacaagaccatcatcctggagcagctgcgg | 1717 |
| | | | |
| Db | 1192 | GATAAATGGATTGGAGGGTCCCCCCCAGCTGACCAGACCTGGTCATCAAGACATTCCGC | 1251 |
| Qy | 1718 | aagatctccctacctctctacagcatcctctctgcctcaccatcctcgggatgatcatg | 1777 |

Db 1252 TTCTGTACAGAACTCTTTATCTCCGTCTCAGTTCTCTCCAGCCTGGGCATTGTCCTA 1311
 Qy 1778 gccagtgcctttctcttcttcaacatcaagaaccggaatcagaagctcataaagatgtcg 1837
 Db 1312 GCTGTTGTCTGTCTGTCTCTTTAACATCTACAACTCACATGTCCGTTATATCCAGAACTCA 1371
 Qy 1838 agtccatacatgaacaaccttatcatccttggaggatgctctcctatgcttccatattt 1897
 Db 1372 CAGCCCAACCTGAACAACCTGACTGCTGTGGGCTGCTCACTGGCTTTAGCTGCTGTCTTC 1431
 Qy 1898 ctctttggccttgatggatcctttgtctctgaaaagaccttgaacaccttgcaccgtc 1957
 Db 1432 CCCCTGGGGCTCGATGGTTACCACATTGGGAGGAACAGTTTCCTTTCGTCTGCCAGGCC 1491
 Qy 1958 aggacctggattctcaccgtgggctacacgaccttggggccatgtttgcaaagacc 2017
 Db 1492 CGCCTCTGGCTCCTGGGCCTGGGCTTTAGTCTGGGCTACGGTTCATGTTACCAAGATT 1551
 Qy 2018 tggagagtccacgccatcttcaaaaatgtgaaaatgaagaagaagatcatcaaggacc-- 2076
 Db 1552 TGGTGGGTCCACACGGTCTTCACAAAGAAGGAAGAAAGAGTGGAGGAAGACTCTG 1611
 Qy 2076 -----agaaactgcttgtgatcggtggggggcatgctgctgatcgacctgtgtatcctg 2128
 Db 1612 GAACCCCTGGAAGCTGTATGCCACAGTGGGCCTGCTGGTGGGCATGGATGTCCTCACTCTC 1671
 Qy 2129 atctgctggcaggctgtggacccccctgcgaaggacagtggagaagtacagcatggagccg 2188
 Db 1672 GCCATCTGGCAGATCGTGGACCCTCTGCACCGGACCATTGAGACATTTGCCAAGGAGGAA 1731
 Qy 2189 gacccagcaggacgggatctccatccgccctctcctggagcactgtgagaacacccat 2248
 Db 1732 CCTAAGGAAGATATTGACGTCTCTATTCTGCCCCAGCTGGAGCATTGCAGCTCCAGGAAG 1791
 Qy 2249 atgaccatctggcttggcatcgctctatgcctacaagggaacttctcatgttggtcggtgt 2308
 Db 1792 ATGAATACATGGCTTGGCATTCTTCTATGGTTACAAGGGGCTGCTGCTGCTGCTGGGAATC 1851
 Qy 2309 ttcttagcttgggagaccgcaacgtcagcatccccgcactcaacgacagcaagtacatc 2368
 Db 1852 TTCCTTGCTTATGAGACCAAGAGTGTGTCCACTGAGAAGATCAATGATCACCGGGCTGTG 1911
 Qy 2369 gggatgagtgtctacaacgtggggatcatgtgcatcatcgggccgctgtctccttctcctg 2428
 Db 1912 GGCATGGCTATCTACAATGTGGCAGTCCTGTGCCTCATCACTGCTCCTGTCACCATGATT 1971
 Qy 2429 acccgggaccagcccaatgtgcagttctgcatcggtggtcatcatcttctgcagc 2488
 Db 1972 CTGTCCAGCCAGCAGGATGCAGCCTTTGCCTTTGCCTCTCTTGCCATAGTTTCTCTCTCC 2031
 Qy 2489 accatcacctctgcctgggtattcgtgccgaagctcatcacctgagaac 2538
 Db 2032 TATATCACTCTTGTGTGCTCTTTGTGCCAAGATGCGCAGGCTGATCAC 2081

ID W40118 standard; Protein; 844 AA.
AC W40118;
DT 03-JUN-1998 (first entry)
DE Rat GABA-BR1b receptor protein.
KW Gamma-aminobutyric acid; GABA-BR1b receptor; rat; brain; agonist;
KW inhibitory neurotransmitter; peripheral nervous system; antagonist;
KW treatment; dementia; depression; anxiety; bronchial inflammation; asthma;
KW epilepsy; cognitive function.
OS Rattus norvegicus.
PN W09746675-A1.
PD 11-DEC-1997.
PF 19-MAR-1997; E01370.
PR 22-NOV-1996; US-756091.
PR 30-MAY-1996; US-655716.
PA (NOVS) NOVARTIS AG.
PI Bettler B, Bittiger H, Froestl W, Kaupmann K, Mickel SJ;
DR WPI; 98-042183/04.
DR N-PSDB; V10266.
PT Purified GABA-B receptor or receptor protein - and antagonists of
PT these which may be useful in treating nervous system disorders
PS Claim 4; Page 74-79; 108pp; English.
CC This sequence represents a novel rat GABA-B receptor protein,
CC GABA-BR1b. GABA (gamma-aminobutyric acid) is the major inhibitory
CC neurotransmitter found in the brain and peripheral nervous system
CC and this receptor may be used for the identification of GABA-B
CC receptor agonists and antagonists. Such proteins may be used in
CC treatment of dementia, depression, anxiety, epilepsy, spasticity,
CC bronchial inflammation or asthma or to improve cognitive function.
CC GABA-B receptor ligands and probes derived from this sequence can be
CC used to assay for GABA-B receptors or DNA encoding them.
SQ Sequence 844 AA;

Query Match 25.4%; Score 1146; DB 1; Length 844;
Best Local Similarity 35.4%; Pred. No. 1.9e-109;
Matches 294; Conservative 188; Mismatches 294; Indels 54; Gaps 18;

| | | | |
|----|-----|--|-----|
| Qy | 10 | PGPPPPPPPPARLLLLLLLPLLLPLAPG-AWGARGA---PRPPSSPPLS----- | 58 |
| | | | |
| Db | 3 | PGGPCTPVGWP-----LPLLLVMAAGVAPVWASHSPHLPRPHRPVPPHPSSERRAVY | 54 |
| Qy | 58 | IMGLMPLTKEVAKGSIGRGVLPVELAIEQIRN-ESLLRPYFLDLRLYDTECDNAKGLKA | 116 |
| | | : : : : : : : : : : : : : | |
| Db | 55 | IGALFPMS---GGWPGGQACQPAVEMALEDVNSRRDILPDYELKLIHDSKCDPGQATKY | 111 |
| Qy | 117 | FYDAIKYGNHLMVFGVCPSVTSIIAESLQGNLVQLSFAATTPVLADKKKYPYFFRTV | 176 |
| | | : : : : : : : : : : : : : : | |
| Db | 112 | LYELLYNDPIKIILMPG-CSSVSTLVAEAAARMWNLIVLSYGSSSPALSNRQRFPTFFRTH | 170 |
| Qy | 177 | PSDNAVNPAILKLLKHYQWKRVGTLTQDVQRFSEVRNDLTGVLYGEDIEISDTESFSNDP | 236 |
| | | : : : : : : : : : : : : : | |
| Db | 171 | PSATLHNPTRVKLFKKGWKKIATIQQTTEVFTSTLDDLEERVKEAGIEITFRQSFFSDP | 230 |
| Qy | 237 | CTSVKKLKGNDVRIILGQFDQNMAAKVFCCAYEENMYGSKYQWIIPGWYEPSWWEQVHTE | 296 |
| | | : : : : : : : : | |
| Db | 231 | AVPVKNLKRQDARIIVGLFYETEARKVFCEVYKERLFGKKYVWFLIGWYADNWF---KTY | 287 |
| Qy | 297 | ANSSRCLRKNNLLAAMEGYIGVDFEPLSSKQIKTISGKTPQYEREYNN--KRSGVGPSKF | 354 |
| | | : : : : : : : : : : : : : : : | |
| Db | 288 | DPSINCTVEEMTEAVEGHITTEIVMLNPANTRISISNMTSQEFVEKLTKRLKRHPREETGGF | 347 |

| | | | |
|----|-----|---|-----|
| Qy | 355 | H--GYAYDGIWVI AKTLQRAMETLHASSRH-QRIQDFNYTDH TLGRILNAMNETNFFGV | 411 |
| Db | 348 | QEAPLAYDAI WALALALNK---TSGGGGRSGVRLED FNYNNQTITDQIYRAMNSSSFEGV | 404 |
| Qy | 412 | TGQVVF-RNGERMGT IKFTQFQDSREVKVGEYNAVADTLEI INDTIRFQGSPEPPKDKTII | 470 |
| Db | 405 | SGHVVF DASGSRMAWTLIEQLQGGSYKKIGYYDSTKDDLS-WSKTDKWIGGSPPADQTLV | 463 |
| Qy | 471 | LEQLRKISL PLYSILSALTILGMIMASAF LFFNIKNRNQKLIK MSSPYMNNLIILGMLS | 530 |
| Db | 464 | IKTRFLSQKLFISVSVLSSLGIVLAVVCLSFNIYN SHVRYIQNSQPNLNNLTAVGCSLA | 523 |
| Qy | 531 | YASIFLFGLDGSFVSEKTFETLCTVRTWILTVGYTTAFGAMFAKTWRVHAI FKNVNMKK- | 590 |
| Db | 524 | LAAVFPLGLDGYHIGRSQFPFVCQARLWLLGLGFS LGYGSMTFKIWWVHTVFTKKEEKE | 583 |
| Qy | 590 | --KIIKDQKLLVIVGGMLLIDLCLICWQAVDPLRRTVEKYSMEPDPAGRDISIRPLEH | 647 |
| Db | 584 | WRKTLEPWKLYATVGLLVGMDVLT LAIWQIVDPLHRTIETFAKEEPKEDIDVSILPQLEH | 643 |
| Qy | 648 | CENTHMTIWL GIVYAYKGLLMLFGCFLAWETRNV SIPALNDSKYIGMSVYNVGIMCIIGA | 707 |
| Db | 644 | CSSKKMNTWLGIFYGYKGLLLLLLGIFLAYETKSVST EKINDHRAVGMAIYNVAVLCLITA | 703 |
| Qy | 708 | AVSFLTRDQPNVQFCIVALV IIFCSTITLCLVFVPKLITLRTNPDAATQNR RFQFTQNQK | 767 |
| Db | 704 | PVTMILSSQQDAAFASFASLAIVFSSYITLVVLFV PKMRRLLITRGE-----WQSET | 753 |
| Qy | 768 | KEDSKTSTSVTSVNQASTSRLEGLQSENHRLRMKITELDKDLEEVTMQLO | 817 |
| Db | 754 | QDTMKTGSS-TNNNEEEKSRL--LEKENRELEKIIAEKEERVSELRHQLQ | 800 |

ID V10267 standard; cDNA to mRNA; 2924 BP.
AC V10267;
DT 03-JUN-1998 (first entry)
DE Human GABA-BR1b receptor cDNA.
KW Gamma-aminobutyric acid; GABA-BR1a/b receptor; human; brain; agonist;
KW inhibitory neurotransmitter; peripheral nervous system; antagonist;
KW treatment; dementia; depression; anxiety; bronchial inflammation; asthma;
KW epilepsy; cognitive function; ds.
OS Homo sapiens.
FH Key Location/Qualifiers
FT CDS 169..2703
FT /*tag= a
FT /product= GABA-BR1b
PN WO9746675-A1.
PD 11-DEC-1997.
PF 19-MAR-1997; E01370.
PR 22-NOV-1996; US-756091.
PR 30-MAY-1996; US-655716.
PA (NOVS) NOVARTIS AG.
PI Bettler B, Bittiger H, Froestl W, Kaupmann K, Mickel SJ;
DR WPI; 98-042183/04.
DR P-PSDB; W40119.
PT Purified GABA-B receptor or receptor protein - and antagonists of
PT these which may be useful in treating nervous system disorders
PS Claim 3; Page 79-86; 108pp; English.
CC This cDNA sequence encodes a novel human GABA-B receptor protein,
CC GABA-BR1b. GABA (gamma-aminobutyric acid) is the major inhibitory
CC neurotransmitter found in the brain and peripheral nervous system
CC and this receptor may be used for the identification of GABA-B
CC receptor agonists and antagonists. Such proteins may be used in
CC treatment of dementia, depression, anxiety, epilepsy, spasticity,
CC bronchial inflammation or asthma or to improve cognitive function.
CC GABA-B receptor ligands and probes derived from this sequence can be
CC used to assay for GABA-B receptors or DNA encoding them.
SQ Sequence 2924 BP; 628 A; 852 C; 793 G; 651 T;

Query Match 9.0%; Score 313.6; DB 1; Length 2924;
Best Local Similarity 49.1%; Pred. No. 6.9e-48;
Matches 996; Conservative 0; Mismatches 1004; Indels 30; Gaps 5;

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Qy 527 cccgccgtggaactggccatcgagca---gatccgcaacgagtcaactcctgcgcccctac 583
      ||||| ||||| ||||| | ||| | || || | ||||| |||
Db 385 CCCGCGGTGGAGATGGCGCTGGAGGACGTGAATAGCCGCAGGGACATCCTGCCGGACTAT 444

Qy 584 ttccctcgacctgcggctctatgacacggagtgcgacaacgcaaaagggttgaaagccttc 643
      ||| | || | ||||| ||||| | ||| || |||
Db 445 GAGCTCAAGCTCATCCACCACGACAGCAAGTGTGATCCAGGCCAAGCCACCAAGTACCTA 504

Qy 644 tacgatgcaataaaaatacgggcccgaaccacttgatggtggttgaggcgctctgtccatcc 703
      || || | | ||| ||||| || || | || ||| ||
Db 505 TATGAGCTGCTCTACAACGACCCTATCAA---GATCATCCTTATGCCTGGCTGCAGCTCT 561

Qy 704 gtcacatccatcattgcagagtcacctccaaggctggaatctggtgcagcttttcttttgct 763
      ||| | | | ||||| ||||| || ||||| |||
Db 562 GTCTCCACGCTGGTGGCTGAGGCTGCTAGGATGTGGAACCTCATTGTGCTTTCCTATGGC 621

Qy 764 gcaaccacgcctgttctagccgataagaaaaaataacccttatttctttcggaccgtccca 823
      | | | | | | || | | | | ||| ||||| |||
Db 622 TCCAGCTCACCAGCCCTGTCAAACCGGCAGCGTTTCCCCACTTCTTCCGAACGCACCCA 681

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Qy 824 tcagacaatgcggtgaatccagccattctgaagttgctcaagcactaccagtggaagcgc 883
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 Db 682 TCAGCCACACTCCACAACCCTACCCGCGTGAAACTCTTTGAAAAGTGGGGCTGGAAGAAG 741

Qy 884 gtgggcacgctgacgcaagacggttcagaggttctctgaggtgcggaatgacctgactgga 943
 ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
 Db 742 ATTGCTACCATCCAGCAGACCACTGAGGTCTTCACTTCGACTCTGGACGACCTGGAGGAA 801

Qy 944 gttctgtatggcgaggacattgagatttcagacaccgagagcttctccaacgatccctgt 1003
 ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
 Db 802 CGAGTGAAGGAGGCTGGAATTGAGATTACTTTCCGCCAGAGTTTCTTCTCAGATCCAGCT 861

Qy 1004 accagtgtcaaaaagctgaaggggaatgatgtgcggatcatccttggccagtttgaccag 1063
 ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
 Db 862 GTGCCCCTCAAAAACCTGAAGCGCCAGGATGCCCGAATCATCGTGGGACTTTTCTATGAG 921

Qy 1064 aatatggcagcaaaaagtggttctgtgtgcatacgaggagaacatgtatggtagtaaatat 1123
 ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
 Db 922 ACTGAAGCCCCGGAAGTTTTTTGTGAGGTGTACAAGGAGCGTCTCTTTGGGAAGAAGTAC 981

Qy 1124 cagtggatcattccgggctggtacgagccttcttgggtgggagcaggtgcacacggaagcc 1183
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 Db 982 GTCTGGTTCCTCATTGGGTGGTATGCTGACAATTGGTTCAAG-----ATCTACGAC 1032

Qy 1184 aactcatcccgtgcctccggaagaatctgcttgcctgcatggagggctacattggcgtg 1243
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 Db 1033 CCTTCTATCAACTGCACAGTGGATGAGATGACTGAGGCGGTGGAGGGCCACATCACAAC 1092

Qy 1244 gatttcgagcccctgagctccaagcagatcaagaccatctcaggaaagactccacagcag 1303
 ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
 Db 1093 GAGATTGTCTATGCTGAATCCTGCCAATACCCGAGCATTTCCAACATGACATCCCAGGAA 1152

Qy 1304 tatgagagagagtacaacaacaagcgggtcagg-----cgtggggcccagcaagttccac 1357
 ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
 Db 1153 TTTGTGGAGAACTAACCAAGCGACTGAAAAGACACCCTGAGGAGACAGGAGGCTTCCAG 1212

Qy 1358 gggtagcctacgatggcatctgggtcatcgccaagacactgcagagggccatggagaca 1417
 ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
 Db 1213 GAGGCACCGCTGGCCTATGATGCCATCTGGGCCTTGGCACTGGCCCTGAACAAGACATCT 1272

Qy 1418 ctgcatgccagcagccggcaccagcggatccaggacttcaactacacggaccacacgctg 1477
 ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
 Db 1273 GGAGGAGGCGGCCGTTCTGGTGTGCGCCTGGAGGACTTCAACTACAACAACAGACCATT 1332

Qy 1478 ggcaggatcatcctcaatgccatgaacgagaccaacttcttcgggggtcacgggtcaagtt 1537
 ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
 Db 1333 ACCGACCAAATCTACCGGGCAATGAACTCTTCGTCCTTTGAGGGTGTCTCTGGCCATGTG 1392

Qy 1538 gtattccggaatggggagagaatggggaccattaaatttactcaatttcaagacagcagg 1597
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 Db 1393 GTGTTTGATGCCAGCGGCTCTCGGATGGCATGGACGCTTATCGAGCAGCTTCAGGGTGGC 1452

Qy 1598 gaggtgaaggtgggagagtacaacgctgtggccgacacactggagatcatcaatgacacc 1657
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 Db 1453 AGCTACAAGAAGATTGGCTACTATGACAGCACCAAGGATGATCTTTCCTGGTCCAAAACA 1512

Qy 1658 atcaggttccaaggatccgaaccacaaaaagacaagaccatcatcctggagcagctgcgg 1717
 ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
 Db 1513 GATAAATGGATTGGAGGGTCCCCCCCAGCTGACCAGACCCTGGTCATCAAGACATTCCGC 1572

Qy 1718 aagatctccctacctctctacagcatcctctctgcctcaccatcctcgggatgatcatg 1777

| | | | |
|----|------|---|------|
| Db | 1573 | TTCCTGTCACAGAACTCTTTATCTCCGTCTCAGTTCTCTCCAGCCTGGGCATTGTCCTA | 1632 |
| Qy | 1778 | gccagtgccttttctcttcttcaacatcaagaaccggaatcagaagctcataaagatgtcg | 1837 |
| Db | 1633 | GCTGTTGTCTGTCTGTCTTAAACATCTACAACTCACATGTCCGTTATATCCAGAACTCA | 1692 |
| Qy | 1838 | agtccatacatgaacaaccttatcatccttggagggatgctctcctatgcttccatattt | 1897 |
| Db | 1693 | CAGCCCAACCTGAACAACCTGACTGCTGTGGGCTGCTCACTGGCTTTAGCTGCTGTCTTC | 1752 |
| Qy | 1898 | ctctttggccttgatggatcctttgtctctgaaaagacctttgaaacactttgcaccgtc | 1957 |
| Db | 1753 | CCCCTGGGGCTCGATGGTTACCACATTGGGAGGAACCAGTTTCCTTTCGTCTGCCAGGCC | 1812 |
| Qy | 1958 | aggacctggattctcaccgtgggctacacgaccttttggggccatgtttgcaaagacc | 2017 |
| Db | 1813 | CGCCTCTGGCTCCTGGGCTGGGCTTTAGTCTGGGCTACGGTTCATGTTACCAAGATT | 1872 |
| Qy | 2018 | tggagagtccacgccatcttcaaaaatgtgaaaatgaagaagaagatcatcaaggacc-- | 2076 |
| Db | 1873 | TGGTGGGTCCACACGGTCTTCACAAAGAAGGAAGAAAGAAGGAGTGGAGGAAGACTCTG | 1932 |
| Qy | 2076 | -----agaaactgcttgtgatcggtggggggcatgctgctgatcgacctgtgtatcctg | 2128 |
| Db | 1933 | GAACCCTGGAAGCTGTATGCCACAGTGGGCTGCTGGTGGGCATGGATGTCCTCACTCTC | 1992 |
| Qy | 2129 | atctgctggcaggctgtggacccccctgcgaaggacagtggagaagtacagcatggagccg | 2188 |
| Db | 1993 | GCCATCTGGCAGATCGTGGACCTCTGCACCGGACCATTGAGACATTTGCCAAGGAGGAA | 2052 |
| Qy | 2189 | gacccagcaggacgggatatctccatccgccctctcctggagcactgtgagaacacccat | 2248 |
| Db | 2053 | CCTAAGGAAGATATTGACGTCTCTATTCTGCCCCAGCTGGAGCATTGCAGCTCCAGGAAG | 2112 |
| Qy | 2249 | atgaccatctggcttggcatcgtctatgcctacaagggaacttctcatgttggtcggttgt | 2308 |
| Db | 2113 | ATGAATACATGGCTTGGCATTCTTCTATGGTTACAAGGGGCTGCTGCTGCTGCTGGGAATC | 2172 |
| Qy | 2309 | ttcttagcttgggagacccgcaacgtcagcatccccgcactcaacgacagcaagtacatc | 2368 |
| Db | 2173 | TTCCTTGCTTATGAGACCAAGAGTGTGTCCACTGAGAAGATCAATGATCACCGGGCTGTG | 2232 |
| Qy | 2369 | gggatgagtgtctacaacgtggggatcatgtgcatcatcggggcccgtgtctccttctg | 2428 |
| Db | 2233 | GGCATGGCTATCTACAATGTGGCAGTCCTGTGCCTCATCACTGCTCCTGTACCATGATT | 2292 |
| Qy | 2429 | acccgggaccagcccaatgtgcagttctgcatcggtgctctggtcatcatcttctgcagc | 2488 |
| Db | 2293 | CTGTCCAGCCAGCAGGATGCAGCCTTTGCCTTTGCCTCTCTTGCCATAGTTTCTCCTCC | 2352 |
| Qy | 2489 | accatcacctctgcctggatttcgtgccgaagctcatcaccttgagaac | 2538 |
| Db | 2353 | TATATCACTCTTGTGTGCTCTTTGTGCCAAGATGCGCAGGCTGATCAC | 2402 |

Qy 558 gcaacgagtcactcctgcgcccctacttctcgacctgcggctctatgacacggagtgcg 617
 ||| || | | | | | | | | | | | | | | | | | |
 Db 481 GCAGAGACA---TCCTGCCGGACTACGAGCTCAAGCTTATCCACCACGACAGCAAGTGTG 537

 Qy 618 acaacgcaaaaggggttgaaagccttctacgatgcaataaaatacgggcccgaaccacttga 677
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 Db 538 ACCCAGGGCAAGCCACCAAGTACTTGTACGAACTACTCTACAATGACCCCATCAAGATCA 597

 Qy 678 tgggtgtttggaggcgtctgtccatccgtcacatccatcattgcagagtccctccaaggct 737
 | | | | | | | | | | | | | | | | | | | |
 Db 598 TTCTCATGCCTGG---CTGTAGTTCTGTCTCCACACTTGTAGCTGAGGCTGCCCCGATGT 654

 Qy 738 ggaatctggtgcagctttcttttgcgtgcaaccacgcctgttctagccgataagaaaaaat 797
 ||| || | | | | | | | | | | | | | | | |
 Db 655 GGAACCTTATTGTGCTCTCATATGGCTCCAGTTCACCAGCCTTGTCAAACCGACAGCGGT 714

 Qy 798 acccttattttctttcgaccgtcccatcagacaatgcggtgaatccagccattctgaagt 857
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 Db 715 TTCCACGTTCTTCCGGACGCATCCATCCGCCACACTCCACAATCCCACCCGGGTGAAAC 774

 Qy 858 tgctcaagcactaccagtggaagcgcgtgggcacgctgacgcaagacgttcagaggttct 917
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 Db 775 TCTTCGAAAAGTGGGGCTGGAAGAAGATCGCTACCATCCAACAGACCACCGAGGTCTTCA 834

 Qy 918 ctgaggtgcggaatgacctgactggagttctgtatggcgaggacattgagatttcagaca 977
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 Db 835 CCTCAACGCTGGATGACCTGGAGGAGCGAGTGAAAGAGGCTGGGATCGAGATCACTTTCC 894

 Qy 978 ccgagagcttctccaacgatccctgtaccagtggtcaaaaagctgaaggggaatgatgtgc 1037
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 Db 895 GACAGAGTTTCTTCTCGGATCCAGCTGTGCTGTAAAAACCTGAAGCGTCAAGATGCTC 954

 Qy 1038 ggatcatccttggccagtttgaccagaatatggcagcaaaagtggtctgttgatgcatacg 1097
 | | | | | | | | | | | | | | | | | | | |
 Db 955 GAATCATCGTGGGACTTTTCTATGAGACGGAAGCCCGGAAAGTTTTTGTGAGGTCTATA 1014

 Qy 1098 aggagaacatgtatggtagtaaatatcagtggtcattccgggctggtacgagccttctt 1157
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 Db 1015 AGGAAAGGCTCTTTGGGAAGAAGTACGTCTGGTTCCTCATCGGGTGGTATGCTGACAACT 1074

 Qy 1158 ggtgggagcaggtgcacacggaagccaactcatcccgtgcctccggaagaatctgcttg 1217
 ||| || | | | | | | | | | | | | | | | |
 Db 1075 GGTTCAAG-----ACCTATGACCCGTCATCAATTGTACAGTGAAGAAATGACCG 1125

 Qy 1218 ctgccatggagggctacattggcgtggatttcgagcccctgagctccaagcagatcaaga 1277
 || | | | | | | | | | | | | | | | | | |
 Db 1126 AGGCGGTGGAGGGCCACATCACCACGGAGATTGTCATGCTGAACCCTGCCAACACCCGAA 1185

 Qy 1278 ccatctcaggaaagactccacagcagtatgagagagagtacaacaacaagcggtcagg-- 1336
 ||| || | | | | | | | | | | | | | | | |
 Db 1186 GCATTTCCAACATGACGTCACAGGAATTTGTGGAGAACTAACCAAGCGGCTGAAAAGAC 1245

 Qy 1336 ----cgtggggcccagcaagttccacgggtacgcctacgatggcatctgggtcatcgcca 1391
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 Qy 1392 agacactgcagagggccatggagacactgcatgccagcagccggcaccagcggatccagg 1451
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 Db 1306 TGGCTTTGGCCTGAACAAGACGTCTGGAGGAGGTGGTCGTTCCGGCGTGCGCCTGGAGG 1365

 Qy 1452 acttcaactacacggaccacacgctgggcaggatcatcctcaatgccatgaacgagacca 1511

Db 1366 ACTTTAACTACAACAACCAGACCATTACAGACCAGATCTACCGGGCCATGAACTCCTCCT 1425
 Qy 1512 actttcttcgggggtcacgggtcaagttgtattccggaatggggagagaatggggaccatta 1571
 Db 1426 CCTTTGAGGGCGTTTCTGGCCATGTGGTCTTTGATGCCAGCGGCTCCCGGATGGCATGGA 1485
 Qy 1572 aatttactcaatttcaagacagcagggaggtgaaggtgggagagtacaacgctgtggccg 1631
 Db 1486 CACTTATCGAGCAGCTACAGGGCGGCAGCTACAAGAAGATCGGCTACTACGACAGCACCA 1545
 Qy 1632 acacactggagatcatcaatgacaccatcaggttccaaggatccgaaccacaaaagaca 1691
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 Qy 1692 agaccatcatcctggagcagctgcggaagatctccctacctctctacagcatcctctctg 1751
 Db 1606 AGACCTTGGTCATCAAGACATTCCGTTTCTGTCTCAGAACTCTTTATCTCCGTCTCAG 1665
 Qy 1752 ccctcaccatcctcgggatgatcatggccagtgcctttctcttcttcaacatcaagaacc 1811
 Db 1666 TTCTCTCCAGCCTGGGCATTGTTCTTGCTGTGTGTCTGTCTGTCTTTAACATCTACAACT 1725
 Qy 1812 ggaatcagaagctcataaagatgtcgagtccatacatgaacaaccttatcatccttgag 1871
 Db 1726 CCCAGTTCGTTATATCCAGAACTCCAGCCCAACCTGAACAATCTGACTGCTGTGGGCT 1785
 Qy 1872 ggatgctctcctatgcttccatatttctctttggccttgatggatcctttgtctctgaaa 1931
 Db 1786 GCTCACTGGCACTGGCTGCTGTCTTCCCTCTCGGGCTGGATGGTTACCACATAGGGAGAA 1845
 Qy 1932 agacctttgaaacactttgcaccgtcaggacctggattctcaccgtgggctacacgaccg 1991
 Db 1846 GCCAGTTCCTGTTGTCTGCCAGGCCCGCCTTTGGCTCTGGGCTTGGGCTTTAGTCTGG 1905
 Qy 1992 cttttggggccatgtttgcaaagacctggagagtccacgccatcttcaaaaatgtgaaaa 2051
 Db 1906 GCTATGGCTCTATGTTACCAAGATCTGGTGGGTCCACACAGTCTTCACGAAGAAGGAGG 1965
 Qy 2052 tgaagaa-----gaagatcatcaaggaccagaaactgcttgatcggtgggggggca 2102
 Db 1966 AGAAGAAGGAGTGGAGGAAGACCCTAGAGCCCTGGAAACTCTATGCCACTGTGGGCCTGC 2025
 Qy 2103 tgctgctgatcgacctgtgtatcctgatctgctggcaggtgtggacccctgcgaagga 2162
 Db 2026 TGGTGGGCATGGATGTCCTGACTCTTGCCATCTGGCAGATTGTGGACCCCTTGACCGAA 2085
 Qy 2163 cagtggagaagtacagcatggagccggacccagcaggacgggatatctccatccgcacctc 2222
 Db 2086 CCATTGAGACTTTTGCCAAGGAGGAACCAAGGAAGACATCGATGTCTCCATTCTGCCCC 2145
 Qy 2223 tcctggagcactgtgagaacacccatgatgacctctggcttgcatcgtctatgcctaca 2282
 Db 2146 AGTTGGAGCACTGCAGCTCCAAGAAGATGAATACGTGGCTTGGCATTCTTCTATGGTTACA 2205
 Qy 2283 agggacttctcatgttgttcggttgtttcttagcttgggagaccgcaacgtcagcatcc 2342
 Db 2206 AGGGGCTGCTGCTGCTGCTGGGAATCTTTCTTGCTTACGAAACCAAGAGCGTGCCACTG 2265
 Qy 2343 ccgcactcaacgacagcaagtacatcgggatgagtgctctacaacgtggggatcatgtgca 2402

Db 2266 AAAAGATCAATGACCACAGGGCCGTGGGCATGGCTATCTACAATGTCGCGGTCTGTGTC 2325
 Qy 2403 tcatcgggggccgctgtctccttcctgacccgggaccagcccaatgtgcagttctgcatcg 2462
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 Db 2326 TCATCACTGCTCCTGTGACCATGATCCTTTCCAGTCAGCAGGACGCAGCCTTTGCCTTTG 2385
 Qy 2463 tggctctgggtcatcatcttctgcagcaccatcaccctctgcctgggtattcgtgccgaagc 2522
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 Db 2386 CCTCTCTGGCCATCGTGTTCTCTTCCTACATCACTCTGGTTGTGCTCTTTGTGCCAAGA 2445
 Qy 2523 tcatcaccctgagaac 2538
 | || |||| ||
 Db 2446 TGCGCAGGCTGATCAC 2461

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ID      V10264 standard; cDNA to mRNA; 4376 BP.
AC      V10264;
DT      03-JUN-1998 (first entry)
DE      Rat GABA-BR1a receptor cDNA.
KW      Gamma-aminobutyric acid; GABA-BR1a receptor; rat; brain; agonist;
KW      inhibitory neurotransmitter; peripheral nervous system; antagonist;
KW      treatment; dementia; depression; anxiety; bronchial inflammation; asthma;
KW      epilepsy; cognitive function; ds.
OS      Rattus norvegicus.
FH      Key                      Location/Qualifiers
FT      CDS                      182..3064
FT                                  /*tag= a
FT                                  /product= GABA-BR1a
PN      W09746675-A1.
PD      11-DEC-1997.
PF      19-MAR-1997; E01370.
PR      22-NOV-1996; US-756091.
PR      30-MAY-1996; US-655716.
PA      (NOVS ) NOVARTIS AG.
PI      Bettler B, Bittiger H, Froestl W, Kaupmann K, Mickel SJ;
DR      WPI; 98-042183/04.
DR      P-PSDB; W40116.
PT      Purified GABA-B receptor or receptor protein - and antagonists of
PT      these which may be useful in treating nervous system disorders
PS      Claim 3; Page 42-50; 108pp; English.
CC      This cDNA sequence encodes a novel rat GABA-B receptor protein,
CC      GABA-BR1a. GABA (gamma-aminobutyric acid) is the major inhibitory
CC      neurotransmitter found in the brain and peripheral nervous system
CC      and this receptor may be used for the identification of GABA-B
CC      receptor agonists and antagonists. Such proteins may be used in
CC      treatment of dementia, depression, anxiety, epilepsy, spasticity,
CC      bronchial inflammation or asthma or to improve cognitive function.
CC      GABA-B receptor ligands and probes derived from this sequence can be
CC      used to assay for GABA-B receptors or DNA encoding them.
SQ      Sequence 4376 BP; 940 A; 1209 C; 1195 G; 1032 T;

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Qy 870 accagtgggaagcgctggtggcagcgtgacgcaagacgttcagaggttctctgaggtgcgga 929
 Db 1089 GGGGCTGGAAGAAGATCGCTACCATCCAACAGACCACCGAGGTCTTCACCTCAACGCTGG 1148

Qy 930 atgacctgactggagttctgtatggcgaggacattgagatttcagacaccgagagcttct 989
 Db 1149 ATGACCTGGAGGAGCGAGTGAAAGAGGCTGGGATCGAGATCACTTTCCGACAGAGTTTCT 1208

Qy 990 ccaacgatccctgtaccagtgtcaaaaagctgaaggggaatgatgtgcggatcatccttg 1049
 Db 1209 TCTCGGATCCAGCTGTGCCTGTTAAAAACCTGAAGCGTCAAGATGCTCGAATCATCGTGG 1268

Qy 1050 gccagtttgaccagaatatggcagcaaaagtgttctgttgatgcatacaggagagaacatgt 1109
 Db 1269 GACTTTTCTATGAGACGGAAGCCCGGAAAGTTTTTTGTGAGGTCTATAAGGAAAGGCTCT 1328

Qy 1110 atggtagtaaatatcagtggtatcattccgggctggtacgagccttcttgggtgggagcagg 1169
 Db 1329 TTGGGAAGAAGTACGTCTGGTTCCTCATCGGTGGTATGCTGACAACTGGT----- 1380

Qy 1170 tgcacacggaagccaactcatcccgtgcctccggaagaatctgcttgctgccatggagg 1229
 Db 1380 TCAAGACCTATGACCCGTCAATCAATTGTACAGTGGGAAGAAATGACCGAGGCGGTGGAGG 1439

Qy 1230 gctacattggcggtgatttcgagcccctgagctccaagcagatcaagaccatctcaggaa 1289
 Db 1440 GCCACATCACCACGGAGATTGTCTATGCTGAACCCTGCCAACACCCGAAGCATTTCACA 1499

Qy 1290 agactccacagcagtatgagagagagtacaacaacaagcggtcagg-----cgtggggc 1343
 Db 1500 TGACGTCACAGGAATTTGTGGAGAACTAACCAAGCGGCTGAAAAGACACCCCGAGGAGA 1559

Qy 1344 ccagcaagttccacgggtacgcctacgatggcatctgggtcatcgccaagacactgcaga 1403
 Db 1560 CTGGAGGCTTCCAGGAGGCACCACTGGCCTATGATGCTATCTGGGCCTTGGCTTTGGCCT 1619

Qy 1404 gggccatggagacactgcatgccagcagccggcaccagcggatccaggacttcaactaca 1463
 Db 1620 TGAACAAGACGTCTGGAGGAGGTGGTCGTTCCGGCGTGCCTGGAGGACTTTAACTACA 1679

Qy 1464 cggaccacacgctggggcaggatcatcctcaatgccatgaacgagaccaacttcttcgggg 1523
 Db 1680 ACAACCAGACCATTACAGACCAGATCTACCGGGCCATGAACTCCTCCTCTTGGAGGGCG 1739

Qy 1524 tcacgggtcaagttgtattccggaatggggagagaatggggaccattaaatttactcaat 1583
 Db 1740 TTTCTGGCCATGTGGTCTTTGATGCCAGCGGCTCCCGGATGGCATGGACACTTATCGAGC 1799

Qy 1584 ttcaagacagcagggaggtgaaggtgggagagtacaacgctgtggccgacacactggaga 1643
 Db 1800 AGCTACAGGGCGGCAGCTACAAGAAGATCGGCTACTACGACAGCACCAAGGATGATCTTT 1859

Qy 1644 tcatcaatgacaccatcaggttccaaggatccgaaccaccaaagacaagaccatcatcc 1703
 Db 1860 CCTGGTCCAAAACGGACAAGTGGATTGGAGGGTCTCCCCAGCTGACCAGACCTTGGTCA 1919

Qy 1704 tggagcagctgcggaagatctccctacctctctacagcatcctctctgccctcaccatcc 1763
 Db 1920 TCAAGACATTCCGTTTCTGTCTCAGAACTCTTTATCTCCGTCTCAGTTCTCTCCAGCC 1979

Qy 1764 tcgggatgatcatggccagtgccttttctcttcttcaacatcaagaaccggaatcagaagc 1823

| | | | |
|----|------|---|------|
| Db | 1980 | TGGGCATTGTTCTTGCTGTTGTCTGTCTGTCTTAAACATCTACAACCTCCCACGTTTCGTT | 2039 |
| Qy | 1824 | tcataaagatgtcgagtcatacatgaacaaccttatcatccttggagggatgctctcct | 1883 |
| Db | 2040 | ATATCCAGAACTCCCAGCCCAACCTGAACAATCTGACTGCTGTGGGCTGCTCACTGGCAC | 2099 |
| Qy | 1884 | atgcttccataatttctctttggccttgatggatcctttgtctctgaaaagacctttgaaa | 1943 |
| Db | 2100 | TGGCTGCTGTCTTCCCTCTCGGGCTGGATGGTTACCACATAGGGAGAAGCCAGTTCCCGT | 2159 |
| Qy | 1944 | cactttgcaccgtcaggacctggattctcaccgtgggctacacgaccgttttggggcca | 2003 |
| Db | 2160 | TTGTCTGCCAGGCCCGCCTTTGGCTCTTGGGCTTGGGCTTAGTCTGGGCTATGGCTCTA | 2219 |
| Qy | 2004 | tgtttgcaaagacctggagagtcacgccatcttcaaaaatgtgaaaatgaagaa----- | 2059 |
| Db | 2220 | TGTTCAACCAAGATCTGGTGGGTCCACACAGTCTTCACGAAGAAGGAGGAGAAGAAGGAGT | 2279 |
| Qy | 2059 | ----gaagatcatcaaggaccagaaactgcttgtgatcgtggggggcatgctgctgatcg | 2114 |
| Db | 2280 | GGAGGAAGACCCTAGAGCCCTGGAAACTCTATGCCACTGTGGGCCTGCTGGTGGGCATGG | 2339 |
| Qy | 2115 | acctgtgtatcctgatctgctggcaggctgtggacccccctgcgaaggacagtggagaagt | 2174 |
| Db | 2340 | ATGTCCTGACTCTTGCCATCTGGCAGATTGTGGACCCCTGCACCGAACCATTGAGACTT | 2399 |
| Qy | 2175 | acagcatggagccggaccagcaggacgggatctccatccgccctctcctggagcact | 2234 |
| Db | 2400 | TTGCCAAGGAGGAACCAAAGGAAGACATCGATGTCTCCATCTGCCCCAGTTGGAGCACT | 2459 |
| Qy | 2235 | gtgagaacacccatatgaccatctggcttggcatcgtctatgcctacaagggaacttctca | 2294 |
| Db | 2460 | GCAGCTCCAAGAAGATGAATACGTGGCTTGGCATTCTTCTATGGTTACAAGGGGCTGCTGC | 2519 |
| Qy | 2295 | tgttgttcggttgtttcttagcttgggagaccgcgaacgtcagcatccccgcactcaacg | 2354 |
| Db | 2520 | TGCTGCTGGGAATCTTTCTTGCTTACGAAACCAAGAGCGTGCTCACTGAAAAGATCAATG | 2579 |
| Qy | 2355 | acagcaagtacatcgggatgagtgtctacaacgtggggatcatgtgcatcatcggggccg | 2414 |
| Db | 2580 | ACCACAGGGCCGTGGGCATGGCTATCTACAATGTCGCGGTCTGTGTCTCATCACTGCTC | 2639 |
| Qy | 2415 | ctgtctccttctgacccgggaccagcccaatgtgcagttctgcatcgtggctctggtea | 2474 |
| Db | 2640 | CTGTGACCATGATCCTTTCCAGTCAGCAGGACGCAGCCTTTGCCTTTGCCTCTCTGGCCA | 2699 |
| Qy | 2475 | tcattctctgcagcaccatcaccctctgcctgggtattcgtgccgaagctcatcaccctga | 2534 |
| Db | 2700 | TCGTGTTCTCTTCTACATCACTCTGGTTGTGCTCTTTGTGCCCAAGATGCGCAGGCTGA | 2759 |
| Qy | 2535 | gaac | 2538 |
| Db | 2760 | TCAC | 2763 |

(FILE 'HOME' ENTERED AT 12:22:44 ON 01 JUN 1999)

FILE 'MEDLINE, BIOSIS, CAPLUS' ENTERED AT 12:23:27 ON 01 JUN 1999

L1 6 S HG20
L2 6 DUP REM L1 (0 DUPLICATES REMOVED)
 E MCDONALD, T
 E MCDONALD T/AU
L3 152 S E3
 E MCDONALD TERRE/AU
L4 9 S E4-E6
 E BONNERT T/AU
L5 37 S E3-E7
L6 196 S L3 OR L4 OR L5
L7 22 S L6 AND (GABA? OR GAMMA?)
L8 11 DUP REM L7 (11 DUPLICATES REMOVED)

FILE 'GENBANK' ENTERED AT 12:34:38 ON 01 JUN 1999

L9 2 S HG20

(FILE 'USPAT' ENTERED AT 12:13:09 ON 01 JUN 1999)

L1 1 S HG20

L2 72 S (GABA?(5A)RECEPTOR)/TI OR ((GABA?(5A)RECEPTOR?)/AB)

L8 ANSWER 1 OF 11 MEDLINE
 TI Stoichiometry of a ligand-gated ion channel determined by fluorescence energy transfer.
 AU Farrar S J; Whiting P J; **Bonnert T P**; McKernan R M
 SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1999 Apr 9) 274 (15) 10100-4.
 Journal code: HIV. ISSN: 0021-9258.
 AB We have developed a method to determine the stoichiometry of subunits within an oligomeric cell surface receptor using fluorescently tagged antibodies to the individual subunits and measuring energy transfer between them. Anti-c-Myc monoclonal antibody (mAb 9-E10) derivatized with a fluorophore (europium cryptate, EuK) was used to individually label c-Myc-tagged α 1-, β 2-, or **gamma2**-subunits of the hetero-oligomeric **gamma**-aminobutyric acid (**GABAA**) receptor in intact cells. The maximal fluorescent signal derived from the α 1(c-Myc) β 2**gamma2** and the α 1**beta2**(c-Myc)**gamma2** receptors was twice that obtained with α 1**beta2****gamma2**(c-Myc), suggesting that there are 2x α -, 2x β -, and 1x **gamma**-subunits in a receptor monomer. This observation was extended using fluorescence energy transfer. Receptors were half-maximally saturated with EuK-anti-c-Myc mAb, and the remaining α 1(c-Myc) subunits were labeled with excess anti-c-Myc mAb derivatized with the fluorescence energy acceptor, XL665. On exposure to laser light, energy transfer from EuK to XL665 occurred with α 1(c-Myc) β 2**gamma2** and α 1**beta2**(c-Myc)**gamma2**, but no significant energy transfer was observed with α 1**beta2****gamma2**(c-Myc) receptors, indicating the absence of a second **gamma**-subunit in a receptor monomer. We confirm that the **GABAA** receptor subtype, α 1**beta2****gamma2**, is composed of two copies each of the α - and β -subunits and one copy of the **gamma**-subunit (i.e. (α 1)²(β 2)²(**gamma2**)¹) and conclude that this method would have general applicability to other multisubunit cell surface proteins.

L8 ANSWER 2 OF 11 MEDLINE
 TI Identification of a **GABAB** receptor subunit, gb2, required for functional **GABAB** receptor activity.
 AU Ng G Y; Clark J; Coulombe N; Ethier N; Hebert T E; Sullivan R; Kargman S; Chateaufneuf A; Tsukamoto N; **McDonald T**; Whiting P; Mezey E; Johnson M P; Liu Q; Kolakowski L F Jr; Evans J F; Bonner T I; O'Neill G P
 SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1999 Mar 19) 274 (12) 7607-10.
 Journal code: HIV. ISSN: 0021-9258.
 AB G protein-coupled receptors are commonly thought to bind their cognate ligands and elicit functional responses primarily as monomeric receptors. In studying the recombinant **gamma**-aminobutyric acid, type B (**GABAB**) receptor (gb1a) and a **GABAB**-like orphan receptor (gb2), we observed that both receptors are functionally inactive when expressed individually in multiple heterologous systems. Characterization of the tissue distribution of each of the receptors by in situ hybridization histochemistry in rat brain revealed co-localization of gb1 and gb2 transcripts in many brain regions, suggesting the hypothesis that gb1 and gb2 may interact in vivo. In three established functional systems (inwardly rectifying K⁺ channel currents in *Xenopus* oocytes, melanophore pigment aggregation, and direct cAMP measurements in HEK-293 cells), **GABA** mediated a functional response in cells coexpressing gb1a and gb2 but not in cells expressing either receptor individually. This **GABA** activity could be blocked with the **GABAB** receptor antagonist CGP71872. In COS-7 cells coexpressing gb1a and gb2 receptors, co-immunoprecipitation of gb1a and gb2 receptors was demonstrated,

indicating that $\alpha 1a$ and $\alpha 2$ act as subunits in the formation of a functional **GABA** receptor.

- L8 ANSWER 3 OF 11 BIOSIS COPYRIGHT 1999 BIOSIS DUPLICATE 2
TI Cloning of a novel G-protein-coupled receptor GPR 51 resembling **GABAB** receptors expressed predominantly in nervous tissues and mapped proximal to the hereditary sensory neuropathy type 1 locus on chromosome 9.
AU Ng, Gordon Y. K. (1); McDonald, Terrence; Bonnert, Tim ; Rigby, Michael; Heavens, Robert; Whiting, Paul; Chateaufneuf, Anne; Coulombe, Nathalie; Kargman, Stacia; Caskey, Thomas; Evans, Jilly; O'Neill, Gary P.; Liu, Qingyun
SO Genomics, (March 15, 1999) Vol. 56, No. 3, pp. 288-295. ISSN: 0888-7543.
AB Query of the expressed sequence tag database with the rat metabotropic **GABABR1A** receptor amino acid sequence using the TFASTA algorithm revealed two partial cDNA fragments whose sequence information was then used to isolate by PCR a novel full-length human cDNA encoding a putative G-protein-coupled receptor (GPCR), termed GPR 51. Sequence analysis revealed that it encoded a protein of 941 amino acids, similar in size and
homology to **GABAB** receptors followed by metabotropic glutamate receptors but not other GPCRs. GPR 51 expressed in COS-1 cells showed no specific binding for (3H)(+)baclofen and when expressed in Xenopus oocyte and Xenopus melanophore functional assays showed no activity to **GABA**, (-)baclofen, and glutamic acid. Northern blot analysis and in situ hybridization revealed that GPR 51 transcripts were predominantly expressed in the central nervous system with highest abundance in the cortex, thalamus, hippocampus, amygdala, cerebellum, and spinal cord. In contrast, GPR 51 receptor transcripts were almost not detected in the peripheral tissues. Gene GPR 51 was localized by radiation hybrid mapping to chromosome 9, 4.81 cR from the WI-8684 marker, and proximal to the hereditary sensory neuropathy type 1 locus.
- L8 ANSWER 8 OF 11 MEDLINE DUPLICATE 6
TI The use of expressed sequence tag databases to identify novel human **gamma**-aminobutyric acid type receptor genes.
AU Whiting P J; McAllister G; Bonnert T; Heavens R P; Rigby M R; Sirinathsinghji D J; Marshall G; Thompson S A; Wafford K A
SO BIOCHEMICAL SOCIETY TRANSACTIONS, (1997 Aug) 25 (3) 817-9. Ref: 21
Journal code: E48. ISSN: 0300-5127.